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ABSTRACT

This collection includes eight reports of findings from a series of employer surveys designed to assess the effectiveness of the Targeted Jobs Tax Credit (TJTC). The following papers are included: "Introduction," by John Bishop; "Utilization of the Targeted Jobs Tax Credit," by John Bishop and Susan Ashbrook; "Multivariate Models of Employer Participation in TJTC and Its Effects upon Hiring Policies," by John Bishop and Kevin Hollenbeck; "Does Advertising One's Eligibility for TJTC Help One Get a Job?" by John Bishop and Kevin Hollenbeck; "How Do Employers Find TJTC Eligibles?" by John Bishop; "Impact of TJTC on Employment at Subsidized Firms," by John Bishop; "How Should Government Promote TJTC?" by John Bishop; and "Summary and Policy Implications," by John Bishop. (Appendixes to this collection include a brief description of the first wave of the employer survey, the employer survey questionnaire, detailed data concerning utilization of the Targeted Jobs Tax Credit, and a description of the employer hiring decisions survey.) (MN)

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TARGETED JOBS TAX CREDIT: FINDINGS FROM EMPLOYER SURVEYS

Edited by John Bishop

Prepared for

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TABLE OF CONTENTS

	Page
LIST OF TABLES	v
LIST OF FIGURES	vii
FOREWORD	iv
EXECUTIVE SUMMARY	xi
CHAPTER 1. INTRODUCTION by John Bishop	1
CHAPTER 2. UTILIZATION OF THE TARGETED JOBS TAX CREDIT by John Bishop and Susan Ashbrook	13
CHAPTER 3. MULTIVARIATE MODELS OF EMPLOYER PARTICIPATION IN TJTC AND ITS EFFECTS UPON HIRING POLICIES by John Bishop and Kevin Hollenbeck	37
CHAPTER 4. DOES ADVERTISING ONE'S ELIGIBILITY FOR TJTC HELP ONE GET A JOB? by John Bishop and Kevin Hollenbeck	57
CHAPTER 5. HOW DO EMPLOYERS FIND TJTC ELIGIBLES by John Bishop	65
CHAPTER 6. IMPACT OF TJTC ON EMPLOYMENT AT SUBSIDIZED FIRMS by John Bishop	73
CHAPTER 7. HOW SHOULD GOVERNMENT PROMOTE TJTC? by John Bishop	97
CHAPTER 8. SUMMARY AND POLICY IMPLICATIONS by John Bishop	109
APPENDICES	
A. A BRIEF DESCRIPTION OF THE FIRST WAVE OF THE EMPLOYER SURVEY	137
B. EMPLOYER SURVEY QUESTIONNAIRE	145
C. UTILIZATION OF THE TARGETED JOBS TAX CREDIT	171
D. DESCRIPTION OF THE EMPLOYER HIRING DECISIONS SURVEY	185
REFERENCES	207

LIST OF TABLES

		Page
1.1	TJTC CERTIFICATIONS	6
1.2	TJTC VOUCHERS ISSUED	7
2.1	KNOWLEDGE OF TJTC BY SIZE OF ESTABLISHMENT	15
2.2	KNOWLEDGE OF TJTC BY INDUSTRY	15
2.3	REFERRAL RELATIONSHIP BY SIZE OF ESTABLISHMENT	17
2.4	REFERRAL RELATIONSHIPS BY INDUSTRY	17
2.5	PARTICIPATION IN TJTC BY SIZE OF ESTABLISHMENT	19
2.6	PARTICIPATION IN TJTC BY INDUSTRY	20
2.7	UTILIZATION BY WHO INITIATED THE FIRST CONVERSATION ABOUT TJTC	23
2.8	REASONS FOR NOT PLANNING TO ASK FOR REFERRALS OF TAX CREDIT ELIGIBLES WHEN AN UNSKILLED WORKER IS NEEDED	25
2.9	WHY EMPLOYERS WHO HIRED ELIGIBLE WORKERS DID NOT OBTAIN CERTIFICATION	27
2.10	IMPACT OF TJTC ON THE RECRUITMENT AND SELECTION OF DISADVANTAGED WORKERS	32
3.1	DESCRIPTIVE STATISTICS FOR INDEPENDENT VARIABLES	45
3.2	MODELS OF KNOWLEDGE OF CONTACTS ABOUT TJTC, AND WHO INITIATED THE CONTACT	46
3.3	MODELS OF TJTC REFERRAL REQUESTS	48
3.4	MODELS OF TJTC PARTICIPATION	50
3.5	IMPACT OF TJTC USER ON HIRING BEHAVIOR	53
4.1	EFFECTS OF TJTC ELIGIBILITY ON HIRING PRIORITY RATINGS	62
5.1	PRIMARY METHOD OF FINDING OUT ABOUT TJTC ELIGIBILITY	66
5.2	HOW TJTC ELIGIBLES ARE FOUND	67
6.1	IMPACT OF TARGETED EMPLOYMENT SUBSIDIES ON EMPLOYMENT GROWTH	80

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List of Tables--Continued

		Page
6.2	IMPACT OF TARGETED EMPLOYMENT SUBSIDIES ON EMPLOYMENT GROWTH	81
6.3	IMPACT OF TARGETED EMPLOYMENT SUBSIDIES ON EMPLOYMENT GROWTH	85
6.4	TWO-STAGE LEAST SQUARES MODELS OF THE IMPACT OF TARGETED EMPLOYMENT SUBSIDIES	87
6.5	IMPACT OF TARGETED EMPLOYMENT SUBSIDIES ON THE SHARE OF THE WORK FORCE UNDER AGE 25	88
6.6	IMPACT OF TJTC ON EMPLOYMENT GROWTH AND THE SHARE OF THE WORK FORCE UNDER THE AGE OF 25	91
7.1	THE INCREASE IN USE OF TJTC DATA DUE TO A GOVERNMENT-INITIATED CONTACT	101
7.2	IMPACT ON THE USE OF TJTC OF GOVERNMENT INITIATED OFFERS TO REFER TJTC ELIGIBLES	102
7.3	CONNECTION BETWEEN PROGRAM GOALS AND THE TARGETING OF OUTREACH	106
8.1	TJTC VOUCHERING AND CERTIFICATIONS	116

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LIST OF FIGURES

		Page
6-1.	Relationship for the jth firm.	76
6-2.	Representation of the causal circle.	84
8-1.	Percent of disadvantaged youth obtaining a TJTC certified job.	114
8-2.	Vouchering of eligible disadvantaged youth--FY 1983.	115

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FOREWORD

Very little is known about what determines the use of the Targeted Jobs Tax Credit (TJTC) and its impact on the economy. To address these and other issues, the National Center for Research in Vocational Education commissioned the Gallup Organization to conduct telephone interviews with over 3,500 employers. This report is one of a series of reports analyzing how employers select and train employees and how government efforts to influence these decisions are working.

Under sponsorship of the U.S. Department of Health and Human Services (HHS), the Research Division of the National Center for Research in Vocational Education has undertaken two important studies of firm employment decision making. This report examines employer participation in the Targeted Jobs Tax Credit (TJTC) program and its effects on employer's selection of new hires and total employment. The companion study concludes an investigation of the way firms set their recruitment, selection, retention, and promotion policies, and how that behavior varies across low-wage and non-low-wage labor markets.

We wish to express gratitude to the Office of the Assistant Secretary for Planning and Evaluation/HHS for sponsoring this study, and to Marcia Weaver, Daniel Weinberg, and Carol Nezzo who served as project officers, for their guidance and support. We wish also to thank the National Institute of Education for funding the data collection effort that provided the database for this study. We wish to acknowledge the support of the U.S. Department of Labor, the W. E. Upjohn Institute for Employment, and the Swedish Institute for Social Research in earlier stages of this research.

This research would not have been possible without the cooperation and assistance of the 3,500 employers who so graciously responded to our telephone interviews. We greatly appreciate the time and the insights that these very busy men and women contributed to the study.

The project is also indebted to the many employers who assisted in the design of the interview instrument. In this regard, special thanks are due to Jim Medoff, Harvard University; Frank Stafford, Chairperson of the Department of Economics, University of Michigan; Clifford Roe, Supervisor of Salaried Union Relations and Equal Employment Opportunity (EEO) Administrator (retired), Buffalo Division, Westinghouse Electric Corporation; and William J. Dennis, Research Director, National Federation of Independent Business. Wilson S. Johnson, President of the National Federation of Independent Business, was very supportive of the study and graciously provided a letter of introduction that was sent to all of the employers selected for an interview.

The National Center recognizes and extends its thanks to Kevin Hollenbeck and John Bishop for directing the studies under this program of research and for writing the final reports. The assistance of Professor Mark Montgomery on the TJTC study is also appreciated.

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Thanks are extended to the staff at the Gallup Organization who supervised the telephone survey: Mitchell Cohen, Nancy Nygreen, Peggy Ashton, and Corinne Kyle. Many helpful suggestions were also made by reviewers of an earlier draft of this report: Robert L. Crosslin, Sandra Christensen, Richard Wilkie, Suk Kang, and Kevin Hollenbeck. Kevin Landin and Mark Menden performed the programming and database preparation; the manuscript was edited by Constance Faddis of the National Center's editorial staff; and it was typed by Cathy Jones, Colleen Kinzelman, Debbie Fladen, and Vera Mueller.

Robert E. Taylor
Executive Director
The National Center for Research
in Vocational Education

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EXECUTIVE SUMMARY

High unemployment rates persist among minorities and youth in the face of tight labor markets for skilled workers and accelerating wage/price inflation. This has led economists and policymakers to search for new ways to stimulate employment and training opportunities for inexperienced and disadvantaged workers. Programs have been established to induce the private sector to create additional jobs and to provide training for unskilled and inexperienced workers.

The largest of these programs, the Targeted Jobs Tax Credits (TJTC) program authorized by the Revenue Act of 1978. It offered employers outside the personal service sector a tax credit for certain categories of workers. In 1980 these included the following:

- Economically disadvantaged youth ages (18-24)
- Youth ages (16-18) participating in a cooperative education program
- Economically disadvantaged Vietnam-era veterans (under age 35)
- Economically disadvantaged ex-offenders
- Handicapped persons receiving or having completed vocational rehabilitation
- General assistance recipients
- Supplemental Security Income recipients

The Act permitted employers who hired members of one of the target groups to claim a tax credit of 50 percent of the first $6,000 of wages paid to each eligible employee during the first year of employment and a tax credit of 25 percent of such wages for the second year of employment.

A criticism of the original program was that it gave employers a subsidy for workers they would have hired in any case. This criticism stemmed from the fact that (1) half of the TJTC eligibility certifications were for cooperative education program participants, whom employers probably would have hired in the absence of the program; and (2) about 60 percent of the remaining certifications were obtained retroactively i.e., after the hire occurred. To counter this criticism, the Economic Recovery Tax Act (ERTA) of 1981 eliminated both the general eligibility for cooperative education program

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participants (economically disadvantaged students remained eligible) and retroactive certification. The 1981 Act also added two new target groups: Aid to Families with Dependent Children (AFDC) recipients/Work Incentive (WIN) participants, and involuntarily terminated Comprehensive Employment Training Act (CETA). It also abolished the WIN tax credit as a separate program. The Tax Equity and Fiscal Responsibility Act of October 1982 established a new target group--economically disadvantaged persons ages 16 and 17 working during the summer--and offered a tax credit of 85 percent of the first $3,000 (or less) of wages paid for hiring these workers.

The TJTC program started slowly, but by fiscal year 1981 it had grown to a point where 400,000 workers were being certified (hired and claimed by an employer) per year. Eligibility was tightened in 1981 and that combined with the recession, caused the number of certifications to subsequently fall to 202,261 in fiscal year 1982. With the end of the recession, the total number of certifications rebounded to 563,381 in fiscal year 1984.

Participation in TJTC

Because it is an entitlement and requires little paperwork TJTC has had greater success at obtaining employer participation than previous targeted employment subsidies, such as the WIN tax credit, the National Alliance of Business JOBS program, and CETA on-the-job training. Nevertheless, the Congressional Budget Office estimates that TJTC is currently helping less than 10 percent of the pool of young people eligible for the program. The companies that participate in TJTC account for only 3 to 4 percent of the nation's employers and only 16 percent of the nation's jobs. Why are participation rates so low? The probable cause is ignorance. Most eligible youth are not aware of the program's existence or their own eligibility. Most employers cannot tell which of their job applicants are eligible. Most do not know the criteria which defines a worker's eligibility.

Yet 77 percent of all employers (accounting for 90 percent of all employment) have heard of TJTC. Why have they not learned enough to use the program? Only 6.7 percent of the nation's employers have initiated a conversation with government agencies or other information sources about TJTC.

Analyses of econometric and qualitative evidence yield the following reasons why so many employers have not spent the time to learn enough about the TJTC program:

- Many employers believe that the types of individuals for whom subsidies are available are not the types of people they currently hire, and that these people would not perform adequately if they were hired.
- Many employers believe that the necessary paperwork will be very burdensome.
- Many employers believe that learning how to use the program and finding qualified TJTC eligibles will be costly to the firm.

The first perception is no doubt correct for some employers: those who do not expect to do any hiring, have obligations to recall laid-off workers, or do not expect to hire any unskilled or inexperienced workers in the near future. Many employers, however, hire TJTC eligibles without realizing it. Clearly, their perception about these workers is wrong. Why?

In many cases, employers are unfamiliar with the eligibility rules. Those who know the rules cannot apply them because job applications do not ask whether the applicant is on welfare or from a low-income family. Many employers have prejudices against TJTC's target groups so the members of these target groups do not volunteer the information, and some lie if asked. Not knowing which of their current employees are members of the stigmatized target groups employers have no empirical basis upon which to reevaluate their prejudice, and so it is perpetuated. Believing that TJTC eligibles make poor workers, these employers see no reason to learn more about the program. Our research found, in fact, that the TJTC eligibles hired were just as productive as other workers hired for equivalent job.

In some cases, employers know they are hiring TJTC eligibles and choose not to apply for the tax credit because they believe the paperwork will be very costly. Here again the perception is sometimes correct. There has been a number of administrative problems that have made employers participation in TJTC difficult and costly. In 1979, for instance, when the federal contribution to administrative costs ran out in the state of Wisconsin, certifications dropped to almost 0 for the final 3 months of the year.

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TJTC was structured, however, to minimize the paperwork burden to the employer. It does take some effort to learn how to use the program, but once the company has learned how, the costs of certifying eligibles are very small if the employment service does its job well. The highly targeted nature of the program means that the eligibility determination process involves a good deal of paperwork, but the burden of this paperwork falls on the worker and the employment service rather than on the employer. Why, then, do some employers perceive paperwork to be such a burden? Employers' assumptions about burdensome paperwork probably come from previous experience with other government programs and from the generally bad reputation of government in the business community.

The third barrier to participation is the perception that it is costly to learn how to use the program and to identify and recruit TJTC eligibles. Evidence for the importance of these costs is the large impact that proxies for fixed costs of learning how to use TJTC had on participation. This barrier can be reduced, however, by program administrative actions. The study found that personal contacts by job developers who promise to screen and refer TJTC eligibles qualified for the firm's jobs can significantly lower these costs and make TJTC participation attractive to the employer. Such contacts inform employers of the program's existence and nature, and, more importantly, they increase the probability of participation in the program and the probability of a change in hiring policies favoring the disadvantaged.

The agencies that administer TJTC at the local level have a very critical role to play. These agencies must erase the myths that paperwork is burdensome and TJTC eligibles do not make good workers and lower the real costs of participation. How well they market the program makes a big difference in participation rates. There are dramatic differences between states in the proportion of their disadvantaged youth who are served by the program. Vermont, for instance, vouchers 35 percent of its eligible youth and certifies 9.2 percent, whereas while New Hampshire vouchers only 10 percent and certifies 3.8 percent. The willingness of firms to participate in these programs does not vary appreciably from state to state; what does vary are the policies and effectiveness of the local administrators of the TJTC program.

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The Impact of TJTC

The purpose of a targeted employment subsidy is to lower the NAIRU, the rate of unemployment that is consistent with a non accelerating rate of inflation. If successful, the program accomplishes this by twisting labor market demand in favor of disadvantaged segments of the population that are unable to find employment even when labor markets are tight. The change in the labor market will reduce demand for types of workers who are in shortage and/or in relatively fixed supply and increase demand for unskilled and inexperienced workers who are in elastic supply. One justification for engineering such a change is that shifts in relative demand towards factors of production that are in more elastic supply will produce an increase in gross national product (Bishop 1979). Other justifications for such an intervention can be a need to correct distortions created by any or all of the following labor market imperfections listed below.

- The minimum wage. Many studies have shown that the minimum wage depresses the employment of black youth (Brown et al. 1983). Hashimoto (1983) and Bishop (1982) present edivence that it also reduces investments in on-the-job training.

- High marginal tax rates on the earnings of welfare recipients. Numerous studies have found that welfare programs reduce the employment of welfare recipients. (Danziger, Haveman, and Plotnik, 1981)

- Prejudices. Many employers believe that welfare recipients, teenagers from low-income backgrounds, and black teenagers as a class are probably less productive and less likely to stay with the firm. Since employers seldom know whether their employees were on welfare or come from a low-income family, this opinion is often based on prejudice rather than hard data. Nevertheless, the opinion has the effect of reducing the job opportunities for these individuals.

- Underinvestment in on-the-job training (OJT) by employers and their employees because of the following:

  --lack of access to credit markets to finance the costs of OJT;

  --higher tax rates on the benefits of OJT than on the costs of OJT; and

  --lack of recognition by other potential employers of the OJT that an employee receives.

  The problem of underinvestment in OJT is especially severe for disadvantaged youth.

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- Governmental decisions or union contract provisions that set very high starting wage rates for unskilled positions and for positions where the incumbent receives a great deal of general training. When starting wage rates are especially high, a long queue of people apply for every job opening. Selecting the best-qualified person results in an overqualified new hire and fewer opportunities for the disadvantaged workers who typically end up at the end of the queue.

When such labor market imperfections are present, a program that twists the labor market in favor of hiring and training unskilled workers can make both unskilled and skilled workers better off (Johnson 1982; Lerman 1982). Another justification of efforts to twist the structure of labor market demand is provided in the work of Baily and Tobin (1978). They propose a model in which aggregate rates of wage inflation are more responsive to labor market conditions in the skilled labor market than in the unskilled labor market. Nichols (1982) examined the effect of occupation-specific unemployment rates on the wage rates of skilled and unskilled labor. The findings supported the Baily-Tobin hypothesis and implied that the aggregate NAIRU could be shifted by a reallocation of unemployment from unskilled labor markets into skilled labor markets.

If TJTC is to lower the NAIRU, and increase employment and GNP, it must first change who is hired. It could do so by inducing participating firms that normally hire many disadvantaged workers to expand. Such responses are not essential, however, for TJTC to accomplish its objective. What is essential is that TJTC induce subsidized firms to hire targeted workers for jobs that would otherwise be been filled by better-qualified workers.

Is TJTC achieving these central objectives? The program can be considered cost-effective only if a reasonable proportion of TJTC certifications represent an increase in the hiring of targeted workers, and if this hiring does not result in other similarly disadvantaged workers being unable to find a job.

A definitive quantitative estimate of cost-effectiveness cannot be obtained through the analyses of employer data. Few if any employers know which or how many of their employees are former welfare recipients or live in

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families that meet the government's criteria for being disadvantaged. This makes it infeasible to obtain the cross-sectional or longitudinal data necessary for econometric studies of TJTC's impact on the proportion of a company's work force that is in a target group. Other types of evidence are available, however, and are analyzed elsewhere in this document.

Most of the evidence reviewed suggests that TJTC does shift hiring demand in favor of the disadvantaged, as follows.

The workers obtaining TJTC certified jobs seem to be disadvantaged. This is shown in the following findings:

- 83 percent are under the age of 25
- 31 percent are black
- 9 percent are Hispanic
- 73 percent of the jobs obtained pay less than $4.00/hour
- 41 percent of the jobs are in service occupations

Most employers do not seem to have lowered hiring standards by any significant amount when they hired TJTC eligibles. Evidence for this is that, compared to other new hires for the same (or similar) jobs, TJTC eligibles have the following characteristics:

- Generally poorer credentials:
  --half as much relevant work experience;
  --one less year of schooling; and
  --are less likely to have received relevant vocational training.

- About the same level of productivity on the job as other workers in the same job.

- Similar turnover to other workers in the same job.

The great majority of certifications are at companies that report that they "make an effort to select new employees who are tax credit eligible." Evidence for this is as follows:

- Even though only 25 percent of all participating employers report that they try to select TJTC eligibles, the employers who report making such efforts account for 80 percent of all TJTC certifications (data weighted by probability of selection into the sample).

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- When probabilities of selection into the sample are not used to weight the sample data, 50 percent of TJTC certifications reported by our sample of employers were at companies that report trying to select TJTC eligibles.

- Employers report that, prior to the abolition of retroactive certifications in September 1981, 64 percent of their TJTC-subsidized hires were known or suspected to be eligible when hired.

- Most employers report that when they were aware that a job candidate was eligible for TJTC they did not allow it to influence them when deciding which person to select from the pool of applicants. Eighteen percent said hiring selections were influenced "a great amount" and 15 percent reported that TJTC influenced their decision a moderate amount.

- TJTC seems to influence recruitment practices even more than it influences hiring selections from the pool of applicants.

- Even though only 27 percent of all participating firms had initiated a request for the referral of TJTC eligibles, these firms accounted for 80 percent of all TJTC certifications.

- Firms accounting for 90 percent of all TJTC certifications were using the employment service as a means of recruiting TJTC eligibles

Aggressive users of TJTC are apparently responsible for an increasing share of all TJTC certifications. An aggressive user of TJTC is a company that tries to increase the share of its new hires that are TJTC eligible. To increase significantly the share of hires that are TJTC eligible, a firm must find a way of recruiting TJTC eligibles. A simple way to increase the number of TJTC eligibles is to ask for referrals of eligibles from agencies that help disadvantaged workers find employment. Such referrals are becoming an increasing share of all TJTC certifications. The abolition of retroactive certification has apparently increased the share of knowing TJTC hires who are referrals from 39 to 49 percent.

The econometric estimates of the impact of TJTC on employment at participating firms presented in this report suggest that it may be having a modest effect. The study of data on employment growth in 1981 found that

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the estimated effect of TJTC usage depended upon the specification. When the TJTC usage variable is the ratio of TJTC certifications to employment and effects are allowed to shift when this variable reaches 0.5, TJTC utilization is found to have a significant impact on growth (10 certifications increase employment by about 2) up to the point where the utilization ratio reaches 0.5 and it has no effect beyond that. When the TJTC usage variable is the ratio of TJTC certifications to new hires, estimated impacts of TJTC are essentially zero. Econometric analysis also supports the hypothesis that TJTC raised the proportion of the firms work force that is under the age of 25.

There are, however, two important studies (Burtless and Cheston 1981; Moran et al. 1982) that suggest that TJTC is not having the desired effect of helping the disadvantaged obtain jobs, as discussed next.

Welfare recipients who were trained to inform employers of their eligibility for TJTC in 1980 were less likely to get a job. This was the surprising finding from two small-scale experiments, one in Dayton, Ohio and the other in Racine, Wisconsin. Chapter 4 presents a more recent study that obtained different results, however. It examined the hiring priority ratings that nearly 850 employers gave to simulated job applications and found that TJTC eligibility had a positive effect on these ratings. Apparently either attitudes have changed in the 3 years between the experiments or disadvantaged youth are considerably less stigmatized than welfare recipients.

The bulk of the evidence reviewed implies that TJTC is inducing some firms to change hiring and recruitment practices in ways that favor the disadvantaged. Some firms know prior to making hiring selections which applicants are TJTC eligibles and take this into account when making selections. The TJTC participants who responded in this way had two characteristics:

- They could correct hiring mistakes by firing or laying off a new hire who does not do an adequate job.
- They are firms that do not expect new employees to be experienced and highly trained. They follow a strategy of hiring inexperienced workers and providing the necessary extra training.

A more employer common response to TJTC was to ask for the referral of TJTC eligibles by the employment service or some other agency. Most of the

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time, the use of agency referrals results from agency contact rather than from a firm-initiated request for referrals. Offering to screen and refer TJTC eligibles is not only the best way of inducing a firm to begin participating in TJTC, it is also the best way of persuading employers to include disadvantaged people in the pool of applicants who are considered for job openings.

The final chapter of the report summarizes the findings and suggests a number of ways in which TJTC can be made more effective. Two alternatives to TJTC are also described and evaluated.

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CHAPTER 1

INTRODUCTION

1.1 Background, Objectives, and Operation of the TJTC Program

Over the last two decades, the federal government has repeatedly attempted to induce private employers to increase their hiring of welfare recipients and disadvantaged workers in other categories. The government's purpose has been to enlist the help of the private sector in "getting people off the welfare rolls and on to the tax rolls." The primary examples of this effort are the Targeted Jobs Tax Credit (TJTC), the Work Incentive (WIN) tax credit for recipients of Aid to Families with Dependent Children (AFDC), and the Comprehensive Employment Traiing Act (CETA) on-the-job training contracts. These programs have not achieved a very high rate of employer participation, however, and there is controversy about how effective they have been in inducing changes in employer behavior. As the federal agency responsible for welfare programs, Health and Human Services (HHS) needs to know (1) whether TJTC is indeed reducing the number of people on welfare and (2) how the program can become more cost-effective and successful.

Program Objectives and Legislative History

The federal government has offered to subsidize the hiring of disadvantaged workers by private employers through the TJTC and WIN tax credit (now part of TJTC) programs. The original TJTC program, authorized by the Revenue Act of 1978, subsidized the costs of hiring workers from certain target population groups, which were as follows:

- Economically disadvantaged youth (ages 18-24)
- Youth (ages 16-18) participating in a cooperative education program
- Economically disadvantaged Vietnam-era veterans (under age 35)
- Economically disadvantaged ex-offenders
- Handicapped persons receiving or having completed vocational rehabilitation
- General assistance recipients
- Supplemental Security Income (SSI) recipients

The Revenue Act permitted employers who hired individuals in the target groups to claim a tax credit of 50 percent of the first $6,000 in wages paid to an employee in the first year on the job, and a 25 percent tax credit on the first in $6,000 wages paid in the second year.

A criticism of the original program was that it gave employers a subsidy for workers they would have hired in any case. This criticism stemmed from the fact that (1) half of the certifications were for cooperative education program participants, whom employers probably would have hired in the absence of the TJTC program; and (2) a large share of the remaining certifications were obtained retroactively (that is, after the hire occurred).

Countering this criticism, the Economic Recovery Tax Act of 1981 (ERTA) eliminated both the general eligibility for cooperative education program participants (economically disadvantaged students remained eligible) and retroactive certification. Furthermore, this Act added two new target groups--AFDC recipients/WIN participants and involuntarily terminated CETA/Public Service Employment (PSE) employees—and abolished WIN as a separate program. The Act also extended the program to December 31, 1982.

The Tax Equity and Fiscal Responsibility Act (TEFRA) of October 1982 established a new target group for the program—economically disadvantaged summer youth--and extended the program until December 31, 1984. The Deficit Reduction Act of 1984 further extended it through December 1985. An "economically disadvantaged summer youth employee" is any individual certified by a designated local agency as meeting the following criteria:

- Performs services for the employer between May 1 and September 15
- Has attained age 16 but not 18 on the hiring date
- Has not been an employee of the employer at any time previously
- Is a member of an economically disadvantaged family

Under TEFRA, an employer hiring a TJTC-vouchered summer youth is eligible for a tax credit of 85 percent of the first $3,000 (or less) of the employee's qualified wages for any 90-day period (or less) between May 1 and September 15.

Responsibility for Program Operations

Under federal law, the U.S. Department of the Treasury is the lead agency for the TJTC program.[1] Within that agency, the Internal Revenue Service (IRS) is delegated the authority to administer the tax provisions of the program. The Employment and Training Administration (ETA) of the U. S. Department of Labor (DOL) and the IRS have a Memorandum of Agreement that describes the responsibilities of each agency in conducting the program.

Within the U.S. Department of Labor, ETA has responsibility for the TJTC program and provides general program management, oversight, and basic operating guidelines. The ETA regional offices have responsibility for ensuring that the State Employment Security Agencies (SESAs) within their jurisdictions follow prescribed regulations and guidelines.

At the state level, governors are responsible for ensuring full participation of SESAs in the TJTC program. This participation includes providing assistance in negotiating state and local cooperative agreements.

As the "designated local agencies," SESAs are responsible for the operational management of the TJTC program at the state and local levels. To foster cooperative relationships for administering the TJTC program with other state and local agencies (particularly JTPA administrative units), SESAs are required to do the following:

- Ensure that cooperative agreements have been negotiated with JTPA administrators and other state/local agencies to assist in the TJTC program, particularly the economically disadvantaged summer youth element of that program, by performing eligibility determinations (i.e., TJTC vouchering) and augmenting TJTC marketing activities.
- Provide TJTC information and technical assistance to JTPA agencies and other appropriate state/local agencies.
- Develop state/local marketing campaigns for TJTC. Such campaigns included employment and training organizations already working with the private sector.

TJTC Vouchering and Certification Procedures

For specific eligibility operations, two basic forms are used in the processing of TJTC cases: a voucher and a certification. A voucher is issued by

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the SESA or other vouchering agency to a qualified applicant. The applicant presents the voucher to the employer, who, after deciding to hire the applicant, completes the employer declaration section of the voucher and returns the form to the SESA listed on the voucher. If an employer plans to hire an employee who seems to be eligible but does not have a voucher, the employer is permitted to request certification of eligibility (in writing) from the SESA. In all cases, the certification request must be postmarked on or before the day the individual begins to work.

The employer certification form is completed by the SESA after receipt of the employer declaration or certification request. The certification is then sent to the employer for purposes of completing the IRS tax return (the certification is not filed with the return).

With regard to eligibility, the employment service offices and other vouchering agencies, determine an individual's eligibility by completing the Applicant Characteristic Form. For verification purposes, the vouchering agency may require the applicant to present proof of family income and other information at the time of vouchering. On the other hand, the employment service offices have the option of conducting income verifications "after the fact" on a sample of all vouchers issued. The rules defining income eligibility are quite complex and can not be reliably implemented by employers.

A voucher issued to an individual who is a member of an economically disadvantaged family is valid for only 45 days after the date of issuance. Any voucher issued to an individual who is not required to meet the economically disadvantaged criteria does not have such a time limit. Prior to the Economic Recovery Tax Act of 1981, eligibility determinations for economically disadvantaged persons were valid through the end of the month in which they were issued. Despite the current extension of the voucher expiration period, there is some evidence that employment service offices have encountered difficulties with this provision of the legislation. In Macro's (1984) study of the TJTC summer youth program, for example, many employment service officials reported that the 45-day limit created staffing problems because a significant amount of revouchering had to be conducted.[2]

Experience with TJTC

The TJTC program started slowly but by fiscal 1981, 400,000 workers were being certified per year. Eligibility was tightened in 1981. That, combined with the economic recession, reduced the number of certifications to 202,261 in fiscal year 1982. With the end of the recession the total number of certifications rebounded to 431,182 in fiscal 1983, and rose to 563,381 in fiscal year 1984. There were 1,337,637 vouchers issued in fiscal year 1984. The TJTC program continues to grow, with certifications during the first quarter of 1985 running about 19 percent above the comparable period in fiscal year 1984. Fiscal year 1985 certifications are projected to total 700,000 to 750,000.

The primary population group subsidized by TJTC has been youth. A breakdown of the number of TJTC certifications and vouchers by eligibility category is provided in tables 1.1 and 1.2. Prior to the 1981 ERTA amendments, cooperative education students were the largest single group of TJTC eligibles served, with economically disadvantaged youth a close second. The ERTA requirement that co-op students be disadvantaged has greatly reduced the use of TJTC as a subsidy of co-op education placements. Economically disadvantaged youth (ages 18-24) and the new summer youth group account for 67 percent of all certifications. AFDC recipients are the next most important group, accounting for 12 percent of all certifications.

TJTC has had greater success at obtaining employer participation than previous targeted employment subsidies, such as the WIN tax credit, the National Alliance of Business (NAB) JOBS program, and CETA on-the-job training. This is due to the following features of TJTC:

- TJTC is an entitlement. Reluctance on the part of local agencies to administer it cannot prevent a persistent employer from obtaining certification of employees who are eligible. In fact, ETA's 1979 study of early implementation of TJTC found "the rather limited vouchering and certification activity that had taken place by then was largely in response to employer and applicant inquiries rather than active promotion by their staff."
- Participation in TJTC requires less paperwork than CETA on-the-job training or the JOBS and early WIN programs did and requires fewer contacts between government agencies and the employer.

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TABLE 1.1

TJTC CERTIFICATIONS

	Pre-ERTA	Post-ERTA		
	First Nine Months of FY 1981	Fiscal Year 1982	Fiscal Year 1983	Fiscal Year 1984
Economically Disadvantaged				
Youth (18-24 yrs. old)	124,701	132,195	259,309	328,213
Summer youth (16-17 yrs. old)	--	--	33,538	30,137
Vietnam-era veterans	11,818	13,271	24,141	29,000
Ex-offenders	11,414	13,332	21,929	27,278
Co-op education students	132,314	48,055[a]	8,324[a]	--
Handicapped	12,318	14,727	25,412	38,263
CETA (involuntary terminees)	--	8,147	383	--
General assistance	6,006	8,136	14,480	24,101
SSI recipients	677	782	1,254	1,620
AFDC recipients	WIN	18,503	50,736	84,769
Total	299,248	202,261	431,182	563,381

Source: U.S. Department of Labor. Reports prepared by the U.S. Employment Service Office of Planning and Review/Operation, and dated June 31, 1981; October 6, 1983; December 27, 1983; and January 15, 1985.

[a]The number of co-op education student certifications in FY 1982 and FY 1983 are not available, so the numbers of eligibility determinations have been used in their place (but are not included in the totals for the program).

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TABLE 1.2

TJTC VOUCHERS ISSUED

	Pre-ERTA	Post-ERTA		
	First Nine Months of FY 1981	Fiscal Year 1982	Fiscal Year 1983	Fiscal Year 1984
Economically Disadvantaged				
Youth (18-24 years old)	267,751	299,688	581,795	619,147
Summer youth (16-17 years old)	--	--	87,308	61,876
Vietnam-era veterans	31,976	43,434	80,808	76,001
Ex-offenders	35,232	46,508	94,545	75,322
Co-op Education Students	132,232	48,055[a]	8,324[a]	--
Handicapped	2,900	48,029	78,683	95,443
CETA (involuntary terminees)	--	8,147	1,130	--
General assistance	47,653	54,654	65,169	92,600
SSI recipients	1,481	2,288	3,115	3,755
AFDC recipients	WIN	121,939	294,394	313,493
Total	545,407	624,687	1,286,947	1,337,637

Source: U.S. Department of Labor. Reports prepared by the U.S. Employment Service Office of Planning and Review/Operation, and dated June 31, 1981; October 6, 1983; December 27, 1983; and January 15, 1985.

[a]The number of co-op education student certifications in FY 1982 and FY 1983 are not available, so the numbers of eligibility determinations have been used in their place (but are not included in the totals for the program).

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Nevertheless, the TJTC is currently helping a minority of those eligible for the program. The Congressional Budget Office (CBO) has calculated that the participation rate for disadvantaged youth is less than 10 percent.[3]

1.2 Research Questions

The overall purpose of this study is to (1) better our understanding of the operation of the TJTC program and (2) establish whether TJTC is effective in promoting increased employment of disadvantaged workers. The specific objectives of the research are the following:

- To discover how employers learn of and about TJTC, how this varies with the characteristics of the employer, how the source of this information influences whether employers participate, and how local administrators can target their outreach efforts to firms that are likely to become big users of TJTC if approached.
- To examine whether a firm participates in TJTC by only identifying and certifying eligible employees or by making "an effort to select new employees who are tax-credit eligible," and to understand why this happens.
- To study how employers learn that an individual is eligible. How is the source of this knowledge related to whether the firm is purposely trying to select eligible workers, whether it knew the individual was eligible at the time of hiring the worker, and whether the fact of eligibility influenced its decision?
- To examine whether employers stigmatize individuals who are eligible for TJTC as poorer workers. How does this relate to the extent of employers participation, to whether they make a special effort to select eligible workers, to the nature of the firm, and to the other characteristics of the job applicant?
- To learn how many and what kinds of employers do not obtain certification of employees they know to be eligible, why they choose not to apply, and what proportion of all known eligible hires are not certified for each reason.
- To study changes over time in participation in TJTC. Did the firms that participated in 1979 increase their utilization of the tax credit in 1980, 1981, and 1982?
- To learn what induces firms that have not used TJTC in the past to start using it. What seems to induce firms to become a new user: learning of the program, a personal contact, or the need to hire new employees?

Because of the interest in whether TJTC is influencing hiring decisions or merely subsidizing workers who would have been hired anyway, the study

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focuses on better measurement of these impacts and on the impact of the 1981 ERTA amendments requiring certification of eligibility prior to hiring. The relevant objectives are as follows:

- To measure, for the pre-ERTA period, what share of the certifications were obtained for new employees who were hired prior to learning that they were eligible, and what characteristics of the firm are related to such retroactive certifications.
- To study the impacts of the ERTA changes on overall usage of TJTC, on how a firm recruits eligible workers, and how it learns which job applicants or employees are eligible.
- To study the impact of TJTC on the employment levels of participating firms.
- To study the impact of TJTC on the share of a firm's work force that is under the age of 25.

Because of the complicated eligibility rules, employers find it hard to identify job applicants who are eligible on their own. If their hiring decisions are to be influenced by the program, the difficult job of identifying who is eligible often must be done for the company. The employment service, the welfare office, or some other labor market intermediary must make referrals to the employer. How these referral relationships are established and how effectively they work are important issues for study. The specific research objectives in this area are as follows:

- To study how referral relationships are established. Who initiated the first contact--the firm or the government? What determines whether employers who are asked to accept tax-credit-eligible referrals agree? Which employers do the local administrators typically approach about receiving referrals?
- To learn what causes a referral relationship to be successful.
- To learn the reasons that employers who choose not to accept referrals give for not wanting to participate.

The final objective is to suggest ways by which the TJTC program's impact and cost-effectiveness may be increased.

1.3 Data Sources

A survey sponsored by the National Institute of Education (NIE) and the National Center for Research in Vocational Education (NCRVE) was conducted

between February and June 1982, and provides the database of 3,412 employers for this study of TJTC. The survey represented the second wave of a two-wave longitudinal survey of employers from selected geographic areas across the country.

The first wave, not utilized in this study, was funded by the U.S. Department of Labor to collect data on area labor market effects of its Employment Opportunity Project (EOPP). The survey encompassed 10 EOPP pilot sites and 18 comparison sites selected for their similarity to the pilot site. The survey design specified a strategy of oversampling firms with a relatively high proportion of low-wage workers.

The second wave made an attempt to interview all of the respondents in the first-wave survey. About 70 percent of the original respondents completed surveys for the second wave. The data collected by this second survey on the use of TJTC are more extensive than those available in the first wave (or in any other data set known to the authors).

In the bulk of the sample, respondents were the owners/managers of the establishments. In large organizations, the primary respondent was the person in charge of hiring, generally the personnel officer. When primary respondents were unable to answer a question, they were asked if someone else in the organization would have the information, and that part of the interview was completed with this other official. Other respondents included controllers, wage and salary administrators, and line supervisors (for questions about a particular recent hire). A description of the sample frame of the first wave of the survey and a copy of the relevant portions of the questionnaire are included as Appendix A and B.

The research project is not a definitive study of the impact and cost-effectiveness of TJTC. Although many interesting and important questions can be answered by analysis of the NCRVE employer survey, there are other questions that a policymaker/analyst may ask that cannot be examined with such a data set. For example, data on individuals who are vouchered or certified by TJTC were not analyzed, so there is no information on how long a subsidized worker stays at a subsidized firm or what happens to the worker when he or she

leaves. The report addresses such questions as "Did TJTC induce participating firms to increase total employment or change their hiring policies so as to hire more disadvantaged workers?" Determining whether such impacts resulted in displacement of other workers or in an equivalent net increase in economy-wide employment is beyond the scope of this report.[4]

In this respect--not examining the full general equlibrium effects--this report follows the pattern set by nearly all of the empirical evaluations of employment and training initiatives. General equilibrium effects can be calculated by simulating the impact effects in a fully specified general equilibrium model or by estimating impact effects in aggregate data on geographic areas which encompass all displacement/replacement effects. Both of these avenues will be pursued in the future but they are not part of the current report.

The body of the report is organized into seven chapters. Chapter 2 examines who is using TJTC and how it is being used. Various measures of knowledge, use, and impact of TJTC are tabulated by industry and establishment size. Chapter 3 estimates multivariate behavioral models of knowledge and utilization and uses them to help understand why TJTC has a low participipation rate and which types of firms are the big and/or most cost-effective users of the program. Chapter 4 examines whether welfare clients and others eligible for TJTC should be advised to advertise their eligibility in job interviews. Chapter 5 examines how employers recruit and identify applicants who are eligible for TJTC. Chapter 6 analyzes data on the impact that TJTC has upon the growth of employment at participating firms and the share of that employment that is under the age of 25. Chapter 7 presents an empirical analysis of the effectiveness of federal efforts to promote the TJTC program and suggests a strategy for targeting these promotional efforts to increase the cost-effectiveness of the program. Chapter 8 reviews the implications of the research for policy and suggests a number of important topics for further research.

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CHAPTER 2

UTILIZATION OF THE TARGETED JOBS TAX CREDIT

2.1 Familiarity with Targeted Jobs Tax Credit

Employer familiarity with the TJTC program has been increasing. In the first wave of the NCRVE employer survey (conducted in the spring of 1980), only 17 percent of all employers reported being "familiar" with TJTC.[1] In spring 1982, 77 percent of these same employers reported having "heard" of TJTC.[2] Since firms with fewer than 10 employees account for 80 percent of all firms with payroll, these statistics are dominated by small employers. Firms with fewer than 10 employees account for only 13 percent of all employment, however (U.S. Department of Commerce 1981).

Knowledge of TJTC seems much more extensive when data from individual employers is weighted by the number of people working at that establishment. Employers responsible for 33 percent of employment reported being "familiar" with TJTC in 1980, and employers responsible for 90.5 percent of employment reported having "heard of" TJTC in 1982. Reporting the share of employment at establishments with a particular characteristic is a better way of generally characterizing the labor market, so this is the strategy adopted for the bulk of this chapter (tables 2.1 - 2.6 and 2.10).[3]

Table 2.1 shows how employer knowledge of TJTC in spring 1982 varied with the size of the establishment. Twenty-seven percent of the establishments in the sample were parts of firms or corporations with more than one establishment. Data are reported by establishment size rather than by firm size for two reasons. First, the sample frame for the survey was establishments, not firms. Secondly, the respondents had authority over and knowledge of hiring practices only for their particular establishment.[4] The multivariate analysis in chapter 3 examines the impact of firm size as well as establishment size.

The first line of the table presents the answers to the question, "Have you heard that federal tax credits are available to employers hiring certain types of workers?" By 1982 even the managers of very small firms had heard of TJTC. Only one quarter of the managers of firms with fewer than 10 employees

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reported not having heard of TJTC. Only 1 percent of the respondents from establishments with 500 employees or more admitted to not having heard of TJTC.

Because they have personnel managers and hire more frequently, large employers are more likely to be contacted by those promoting the TJTC program. From the point of view of agencies promoting TJTC, it is more desirable to convince a large firm to participate in the program, because this will probably lead to more TJTC eligibles being hired. Because the costs of learning about the program are roughly constant for employers of different size but the payoffs to using the program are proportional to the number of subsidized hires, large companies may be expected to be more likely to initiate conversations about TJTC with an eye to learning more about it.

The data in table 2.1 confirm both of these expectations. Larger establishments were much more likely to have been contacted about TJTC: 20 percent of establishments with over 500 employees had been contacted by government agencies and 6 percent had been contacted by an unknown or non-governmental group. Only 4.4 percent of the employees with less than 10 employees had been contacted by government agencies and another 4.2 percent by an unknown or nongovernmental group. The percentage of firms that had initiated contacts about TJTC was much higher for larger firms. Forty-two percent of the large employers had initiated such contacts, whereas only 5.8 percent of the smallest firms had done so.

Table 2.2 describes how knowledge and contacts vary by industry. Ninety-three percent of industrial employment (i.e., manufacturing, mining, transportation and utilities was at companies that had heard of TJTC. Industrial establishments were also more likely to have been contacted by government agencies about TJTC: companies representing 24 percent of industrial employment had been contacted by a government agency. This is probably explained by the large size of the typical industrial establishment.

The industry with the lowest government-initiated personal contact rate was the restaurant industry. Total contacts for this industry were very high, however, because contacts initiated by the firm were extremely high. The large firms in the non restaurant retail/wholesale industry also had a high

TABLE 2.1

KNOWLEDGE OF TJTC BY SIZE OF ESTABLISHMENT

	Number of Employees					Total Wtd. by Size	Total not Wtd. by Size
	1-9	10-49	50-99	100-499	500+		
Percent heard of TJTC	76	81	86	95	99	90.5	77.4
Percent contacted in person by government agency	4.4	10	17	30	20	18.0	7.0
Percent contacted in person by trade association, local business organization, or other	4.2	7.7	8.2	18	6.1	10.6	5.2
Percent that have initiated a personal contact	5.8	6.3	17	13	42	20.3	6.7
Total number of cases	1,357	1,212	335	380	80		3,412

Weighted by employment in 1980 and the inverse of the probability of selection

TABLE 2.2

KNOWLEDGE OF TJTC BY INDUSTRY

	Construction	Industrial Sector	Eating & Drinking	Other Wholesale Retail	Finance	Other Services
Percent who have heard of TJTC	90	93	89	90	89	85
Percent contacted in person by government agency	17	24	5.6	16	17	15
Percent contacted in person by trade association or local business organization	6.2	14	10	7.8	10	11
Percent that have initiated a personal contact	9.7	8.7	49	31	19	12
Total number of cases	242	614	328	1,086	238	893

Weighted by employment in 1980 and the inverse of the probability of selection

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propensity to initiate conversations about TJTC. The share of employment accounted for by firms that had initiated such contacts was 31 percent. The share of establishments initiating such contacts was only 6.7 percent, however.

2.2 Referrals of TJTC Eligibles

As might be expected from the data already discussed, larger companies were more likely to receive requests to accept TJTC referrals. Table 2.3 illustrates this. Almost half of the establishments with 500 or more employees were asked by an agency to accept TJTC referrals. Forty-two percent of these firms had initiated requests for referrals and 60 percent planned to ask for referrals in the future. Only 12.5 percent of the smallest employers had been asked to accept a referral, and only 2.6 percent initiated such a request.

The most significant finding from this table is that in 1982 when the survey was conducted many more employers planned to ask for referrals of TJTC eligibles when they had an opening for an unskilled worker than had asked for such referrals in the past. Among the establishments with 500 or more employees, 42 percent had initiated a request for referral of TJTC in the past and 60 percent plan had to do so in the future, an increase of 43 percent. Among establishments with fewer than 10 employees, only 2.6 percent had initiated a referral request in the past, but 13.4 percent planned to do so in the future, an increase of 415 percent. Thus, very small employers expressed a willingness to participate in the program but had not yet done so, probably because they had not recently had an opening that could be filled by a TJTC eligible. The large projected increase in usage by small companies suggests that lack of unskilled job openings is an important reason why small establishment have, in the past, been less likely to participate in TJTC than large firms.

The industry with the highest likelihood of being offered TJTC referrals or of initiating a request for a TJTC referral was the restaurant industry (see table 2.4). The service industry was the least likely to be contacted about receiving TJTC-eligible referrals by the employment service or other government agencies. The construction industry was least likely to initiate referral requests and to plan such requests in the future. Overall, the percentage of firms planning to ask for TJTC referrals in the future was consid-

TABLE 2.3

REFERRAL RELATIONSHIPS BY SIZE OF ESTABLISHMENT

	Number of Employees					Total Wtd. by Size	Total not Wtd. by Size
	1-9	10-49	50-99	100-499	500+		
Percent asked by employment service or other agency to accept TJTC referrals	12.5	20	25	44	51	35.3	15.3
Percent initiating a request for referral of TJTC eligibles	2.5	4.1	5	17	42	18.5	3.8
Percent planning to ask for referral of TJTC eligibles for unskilled openings in future	13.4	21	25	35	60	36.1	16.1
Total number of cases	1,557	1,212	335	380	80		3,412

Weighted by employment in 1980 and the inverse of the probability of selection

TABLE 2.4

REFERRAL RELATIONSHIPS BY INDUSTRY

	Construction	Industrial Sector	Eating & Drinking	Other Wholesale Retail	Finance	Other Services
Percent asked by employment service or other agency to accept TJTC referrals	31	35	49	37	30	26
Percent initiating a request for referral of TJTC eligibles	1.8	12	44	24	8.1	18
Percent planning to ask for referral of TJTC eligibles for unskilled openings in future	13	32	49	48	23	29
Total number of cases	242	614	328	1,086	238	893

Weighted by employment in 1980 and the inverse of the probability of selection

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erably higher than the percentage of firms who had initiated requests in the past. In the industrial sector, 32 percent of employment was in establishments that planned to initiate requests in the future, even though only 12 percent had done so in the past. This is an increase of 166 percent. The industry with the highest rates of usage (referral requests) in the recent past—the restaurant industry—did not expect to be increasing its usage by very much.

2.3 Participation in TJTC

Large establishments were much more likely to participate in TJTC than small establishments (see table 2.5). Larger firms were more likely to have received tax credits under this program, and were more likely to have tried to select TJTC-eligible applicants.

Participation rates dropped for almost every size of establishment after September 1981. The drop in participation was due to the recession, and to two amendments of TJTC's authorizing legislation that took effect in October 1981. One provision ended the eligibility of cooperative education students who were not from low-income families. The second provision required employers to apply for TJTC certification of a new hire on or before the day the employee began work. The purpose of this last change was to ensure that the employer was at least informed of the worker's possible eligibility at the time the hiring decision was made. This, it was hoped, would increase the probability that TJTC would induce changes in recruitment patterns or hiring standards to favor disadvantaged job applicants.

The percentage of all employees who were subsidized did not seem to vary appreciably with establishment size as long as size was under 500 employees. The percentages ranged from 0.3 to 0.7 percent. Within this group in 1981 there was also no tendency for size to influence the percent of new hires that were subsidized in 1981. The range was from 1.1 to 1.7 percent.

The establishments with more than 500 employees tended to obtain subsidies for considerably larger proportions of their work force. In 1981, these largest establishments had obtained subsidies for an average of 5.4 percent of their employees and 18.5 percent of their new hires. It is

TABLE 2.5

PARTICIPATION IN TJTC BY SIZE OF ESTABLISHMENT

	Number of Employees					Total Weighted by Size	Total Not Weighted by size
	1-9	10-49	50-99	100-499	500+		
Percent received TJTC In 1980	3.8	4.6	7.3	5.1	29.4	14.6	4.3
Percent received TJTC between Jan. and Sept. 81	2.6	4.4	9.9	19.8	47.5	21.3	3.5
Percent received TJTC between Sept. 81 & Apr. 82	2.3	2.8	8.2	17.9	34.9	16.1	2.7
Percent trying to select eligibles	1.4	3.2	9.9	13.4	33.8	15.4	2.8
TJTC-subsidized employees In 1980 as % of employment	.7	.6	.7	0.2	2.9		1.0
TJTC-subsidized employees In 1981 as % of employment	.4	.5	.7	0.4	5.4		1.8
TJTC-subsidized employees In 1982 as % of employment	.5	.3	.4	0.2	2.4		.8
TJTC-subsidized employees In 1/81-9/81 as a % of new hires in 1981	1.1	1.2	1.7	0.9	18.5		5.5
Average number of employees	5.3	20.6	66.6	197	907		25.8

The top four rows are weighted by employment in 1980 and the inverse of the probability of selection. The bottom five rows are weighted by the inverse of the probability of selection only.

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TABLE 2.6

PARTICIPATION IN TJTC BY INDUSTRY

	Construc-tion	Industrial Sector	Eating & Drinking	Other Wholesale Retail	Finance	Other Services
Percent received TJTC in 1980	3.6	10.8	4.3	26.7	11.2	8.7
Percent received TJTC between Jan.-Sept. 1981	2.1	15.2	45.7	27.6	12.5	18.5
Percent received TJTC between Sept. 1981 and April 1982	.7	13.5	44.3	19.9	5.3	10.8
Percent trying to select eligibles	1.1	7.2	40.3	20.9	2.1	18.2
TJTC-subsidized new hires in 1980 as % of employment	0.4	0.5	0.4	2.3	.3	0.4
TJTC-subsidized new hires betw. Jan.-Sept. 1981 as % of employment	0.3	0.3	0.6	5.1	.3	0.4
TJTC-subsidized new hires betw. Sept.-April 1982 as % of employment	0.1	0.1	0.6	2.1	.05	0.4
TJTC-subsidized employees Jan.-Sept. 1981 as % of 1981 new hires	0.3	0.8	1.4	18.0	1.2	1.2
Average number of employees	17.1	54.1	38.0	24.8	25.4	17.1

The top four rows are weighted by employment in 1980 and the inverse of the probability of selection. The bottom five rows are weighted by the inverse of the probability of selection only.

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important to remember that there were only 80 establishments with more than 500 employees in the NCRVE Employer Survey sample. A few very large companies were apparently hiring large numbers of subsidized workers. This pattern is consistent with earlier findings showing that large companies tend to be more aware of the program and more aggressive about selecting and certifying eligibles. The changes in the law in 1981 and the recession seem to have caused larger declines in the number of subsidized employees in 1982 than in the number of participating firms. The decline was especially dramatic in the largest establishments.

The pattern of utilization by industry is very revealing (see table 2.6). The retail sector dominated the statistics. A few very large establishments in the restaurant industry seem to have begun to participate in 1981. The share of employment at participating restaurants rose from 4.3 percent, to 46 percent, whereas the share of all establishments participating fell moderately from 4.9 to 4.3 percent. The share of total employment that was subsidized in this industry rose moderately from 0.4 percent to 0.6 percent.[5]

The industry responsible for the greatest number of TJTC certifications in our data was the retail sector (other than food service). During 1980 and 1981, almost 27 percent of the industry's employment was at establishments that were participating in TJTC. In 1981, 5.1 percent of the industry's employment and 18 per cent of its new hires were TJTC eligibles. Just one or two large users of TJTC in the data are probably responsible for these estimates of high utilization by this industry.

Although the specific values for the two parts of the retail sector are probably subject to a great deal of sampling error, it was clear that the retail sector is responsible for most of the nation's TJTC certifications. In 1983, for instance, Pizza Hut was responsible on its own for about 1.5 percent of all TJTC certifications in the nation.

Why has the retail industry been the biggest user of TJTC? A look back at earlier tables reveals that it was not because government agencies were more likely to initiate conversations about TJTC or offer TJTC referrals. According to tables 2.2 and 2.4, the big difference between the retail industry and other industries was their greater likelihood of initiating a conver-

sation about TJTC and their greater likelihood of initiating a request for the referral of TJTC eligibles. They were also more likely to be contacted by an unknown source or one of their trade associations. Firms in the retail industry probably initiated contacts and referral requests because the payoff to participation is higher in their industry than in other industries.

2.4 The Impact of Who Initiates the Conversation

Table 2.7 displays unweighted data on how utilization of TJTC varies by whether there has been a conversation about TJTC and who initiated that conversation. Of the 70 percent of employers who had not had a conversation (n=2407), only 1.5 to 1.7 percent had participated in TJTC, and less than 0.5 percent of their 1981 new hires were subsidized. The firms that had a conversation about TJTC were much more likely to participate in TJTC, to make an effort to select TJTC eligibles, and to ask for referrals of TJTC eligibles. They also hired subsidized workers for a considerably larger proportion of their new positions than employers who had not had a conversation about TJTC.

Not surprisingly, the biggest users of TJTC were employers who initiated the first conversation about TJTC. When the respondent (most often a manager or personnel director) personally initiated the conversation about TJTC, there was a 16 percent chance the firm was trying to select TJTC eligibles, and an average of 4.7 percent of 1981 new hires were subsidized. When someone else in the firm initiated the conversation, there was a statistically significant increase in the probability that the firm was trying to select TJTC eligibles. The level rose to 27 percent, and about 9.7 percent of 1981 new hires were subsidized.[6]

Conversations initiated by government agencies, local business organizations, and other groups seem to have had a roughly equivalent impact on participation and utilization. Policies of selecting TJTC eligibles were found at 12 to 15 percent of these companies, and subsidies were obtained for between 2.5 and 2.8 percent of their new hires in 1981. Conversations initiated by trade association officials seemed to increase participation rates moderately and induced a few firms to try to select TJTC eligibles. Such

TABLE 2.7

UTILIZATION BY WHO INITIATED THE FIRST CONVERSATION ABOUT TJTC
(In percentage)

	You	Your Firm	Govern-ment	Trade Assoc.	Local Business Assoc.	Other	Don't Know	No Conver-sation
Government Offered a Referral	43	39	55	47	41	41	28	10.5
Firm Requested Referrals	29	17	16	9	11	11	8	1.2
Participation In								
1980	27	24	17	4	15	24	21	1.7
Jan 81 - Sept 81	24	24	17	9	23	22	13	1.5
Oct 81 - Apr 82	18	21	13	9	11	22	13	1.5
Tries to Select	16	27	12	5	15	13	15	1.6
Subsidized Hires as a Percent of Employment								
1980	1.4	2.6	.9	.1	.5	1.0	.4	.1
Jan 81 - Sept 81	1.9	2.3	.8	.2	1.1	.7	.1	.2
Oct 81 - Apr 82	1.0	.9	.6	0	.2	.4	.3	.1
Subsidized Hires Jan 81 to Sept 81 as a Percent of New Hires In 81	4.7	9.7	2.5	.8	2.8	2.7	.5	.4
Number of Estab-lishments	177	140	441	43	73	85	39	2404
New Hires In 81	49.2	41.7	47.5	66.7	45.7	33.4	33.5	14.9
Employment In 81	124	181	145	232	119	137	154	39
Percent of Users that Try to Select Eligibles	35	43	28	30	30	26	25	18

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conversations seemed to have had almost no impact on usage, however, possibly because trade associations cannot provide help in recruiting and/or referring eligible job applicants. Such help must necessarily be provided at the local level.

2.5 Reasons Employers Give for Not Participating in TJTC

The 1982 NCRVE employer survey asked emploeyrs who had heard of TJTC whether they planned to asked the employment service for referrals of TJTC eligibles when they needed to hire unskilled workers in the future. Only 27 percent said yes. The other 73 percent were asked "why not, " and their answers, unweighted either the probability of selection or size, are reported in table 2.8.

The reasons cited for not planning to ask for referrals generally related either to not needing or wanting people of the type who would be eligible, or to not wanting to deal with the employment service, the agency that was proposed by the question as the referral source. Thirteen percent were not expecting to hire anyone, 7.6 percent did not need the types of workers who might be eligible, and 17.5 percent thought eligible workers would not be skilled or reliable enough.

Dissatisfaction with the employment service was very common--8.5 percent expressed dissatisfaction with previous employment service referrals and another 23 percent said "I don't use the employment service" without citing a reason. The responses suggest that having to obtain referrals and certifications from the employment service may be an important barrier to participation. The next most common reason, (given by 10.7 percent) for not planning to participate was paperwork. Only 3.3 percent mentioned the possibility of government interference or IRS audit as a disincentive, and only 1.3 percent claimed the tax benefit was too small.

Because many of the negative references to the employment service were probably a consequence of problems with previous referrals, it should be clear that the primary barrier to universal participation is the perception that eligible referrals will be less productive and less stable workers. Since low productivity was the primary criterion for selecting the groups that would be

TABLE 2.8

REASONS FOR NOT PLANNING TO ASK FOR REFERRALS OF TAX CREDIT ELIGIBLES WHEN AN UNSKILLED WORKER IS NEEDED

	Percent of Responses	
Not Hiring That Type of Worker/Not Eligible (Subtotal)	22.0	
Don't expect to be hiring		13.0
Will not be needing types of workers who might be eligible		7.6
Would not benefit because we have no tax liability		.2
We are not eligible		1.2
Eligibles/Referrals Are Thought to Be Poor Workers (Subtotal)	26.0	
Eligible workers not skilled enough		14.0
Eligible workers not reliable enough		3.5
Dissatisfied with employment service referrals		8.5
Don't Use the Employment Service	23.2	
Criticism of TJTC Program (Subtotal)	15.3	15.3
Too much paperwork		10.7
Might result in government interference		3.3
Tax benefit not big enough		1.3
Applicants Should Be Judged by Qualifications and Not by Tax Credit Availability	6.5	
Other/Didn't Think of It	7.0	
Total	100.0	

Unweighted tabulation of answers to "Can you tell us why you do not plan to ask for referrals." The question was asked of the 73 percent of respondents who answered "no" or "don't know" when asked, "In the future, do you plan to ask for referrals of tax-credit-eligible employees when you need to hire unskilled workers?"

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eligible for TJTC, this should not be a surprise. If the program is well targeted, it is almost inevitable that employers will perceive the eligible workers this way.

The stigma attached to being a member of one of the targeted groups does not explain why employers do not request a certification for employees they know to be eligible. The 1982 NCRVE survey found that certifications were not requested for 15 percent of the known TJTC eligibles who were hired. The 118 employers who reported not applying for a tax credit for one or more of their eligible hires were asked why. Their answers are reported in table 2.9. Forty-six of the employers cited procedural reasons for not applying (i.e., employee left too quickly, firm not eligible, deadline passed, etc.). Seventeen employers reported that not knowing how to apply was their reason for not applying, and 25 reported that the paperwork was too great. Only three complained that the tax benefit was too small, only eight said they do not want to get involved with the federal government, and only one mentioned a fear that applying might result in government interference. Thus among firms that hired eligibles, the primary barriers to participation seemed to be paperwork and ignorance. Of the two, ignorance was the most important, for there were large numbers of firms that hired eligibles but did not realize it.

Minimizing paperwork was an important consideration in the original design of TJTC. Unfortunately, most of the complexity and paperwork that remains is an inevitable consequence of the highly targeted nature of the program. The perception that paperwork will be burdensome dissuades many firms from trying to participate in TJTC. This perception is probably a consequence of previous experience with other government programs and the generally bad reputation of government programs in the employer community. It probably is not based on actual experience with TJTC. There are some important costs to learning how to use the TJTC program, but once a firm has learned the ropes, paperwork costs of continuing or increasing participation are small. Because paperwork is, in fact, minimal once the initial costs of learning have been overcome, the negative perception will probably change as the number of firms that have actual experience with the program increases. Consequently, this barrier to participation will probably diminish with time.

TABLE 2.9

WHY EMPLOYERS WHO HIRED ELIGIBLE WORKERS
DID NOT OBTAIN CERTIFICATION

	Number of Responses	
Administrative/Structural Reasons (Subtotal)	46	
Deadline for applying past		5
Employee left before being certified		12
Employee did not stay for required length of time to be certified		9
Not eligible for other reasons		11
General/other administrative and structural		9
Lack of Knowledge/Don't Know How	17	
Benefits Did Not Outweigh Costs (Subtotal)	32	
Paperwork too great		25
Tax benefit too small		3
General		4
Don't Want to Get Involved with Government	8	
Might Result in Interference	1	
Worker Ability	2	
Other	12	
Total	118	

Answers to the question "Why didn't you apply for the tax credit for these eligible employees?"

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2.6 Impact of TJTC on the Recruitment and Selection of the Disadvantaged

In the 1982 NCRVE employer survey, respondents were asked if their company makes an effort to select new employees who are tax-credit eligible. Companies can make an effort to select an eligible in a number of ways, such as recruiting among people likely to be eligible, by asking for referrals, or by giving preference to eligibles when making hiring selections.

Table 2.10 reports the percentage of companies (weighted by employment) that reported attempting to select tax credit eligible workers. Because most firms did not participate in TJTC, it is not surprising that only 15 percent of all employment was in firms trying to select TJTC eligibles. The unweighted percentage of participating companies who tried to select TJTC eligible employees was 25 percent. The percentage of participating employers weighted by size who tried to select tax-credit-eligible employees was 50 percent. As anticipated, participants were more likely to try to select eligibles than non-participants. The fact that weighting by size dramatically increases the proportion of participating companies that reported trying to select TJTC eligibles shows that participating companies with many employees were more likely to modify their hiring policies to make use of the tax credit than participating employers with small work forces.

The table further shows the percentages that reported trying to select eligibles where the firms were weighted by the number of subsidized hires made in 1980-81. The last columns shows the percentage for firms weighted by the number of subsidized hires made after September 1981. The last two numbers were divided at September 1981 because there were significant changes made in the law that came into effect on that date. As might be expected, the percentages are much higher for the last two columns--80 and 81 percent, respectively.[7] The high percentage in columns 5 and 6 reflect the tendency of large users of the program to be more likely to report trying to select eligibles. These high percentages mean that most of the tax credits went to firms that report that TJTC induced them to change their policies in ways that favor the disadvantaged.

Firms were also asked if they tried "to identify and certify tax-credit eligible employees who had already been hired." Only 32 percent of all

companies weighted by size reported having tried to certify eligibles. The primary reasons employers gave for not trying to get tax credits for already hired workers were ignorance of the program or how to apply for it and the belief that none of their new hires were eligible and that the paperwork would be burdensome. The percentage of all participant firms weighted by size who tried to identify and certify employees was significantly larger, 75 percent. The percentages for participating firms weighted by number of subsidized hires were even higher--89 percent for 1980-81 and 90 percent for after September 1981. It is interesting that the differences between all participants and weighted participants were so great for these two lines. Large users were apparently utilizing the TJTC program the most aggressively, in both trying to select and certify TJTC eligibles.

All firms that had heard of TJTC were asked if they thought "that tax-credit-eligible people usually make better or poorer new employees than people who are not tax-credit eligible." The employers that were using the program had a more favorable opinion of TJTC eligibles than those who had not.[8] The typical firm that had heard of TJTC (whether or not it had hired a TJTC eligible) tended to have a negative attitude toward TJTC eligibles. Only 7 percent said TJTC eligibles made better workers, and 35 percent said eligiblity made no difference in the quality of a worker, while 28 percent thought they were poorer than average.

A scale was constructed assigning +1 for employers who thought eligibles made better-than-average workers, 0 for those who thought it made no difference, and -1 for those who thought eligibles made poorer workers. For employers who expressed an opinion, the weighted mean of this scale was -.26. The unweighted mean was even more negative, -.43 (not shown in the table). Clearly, this negative attitude contributed to the low participation rate in the TJTC program.

All participants, which is a number dominated by small users, had a better but still relatively low opinion of TJTC eligibles. The mean for this group was -.17. Weighting the participants by the size of the firm or number of subsidized hires significantly raised the average opinion of TJTC eligibles. When participants were weighted by their size, the mean value of the opinion scale was .03. When weighted by usage of TJTC, the mean opinion was

also roughly zero (-.05 and .04). These firms felt that TJTC-eligible workers were just as productive as the other workers they hired. Roughly as many reported that TJTC eligibles made better workers as reported that they were poorer. This finding implies that among TJTC users large firms and large users had a more favorable impression of TJTC workers. Large users who had good experiences with TJTC workers seemed to continue to use the program after eligibility rules were tightened.

This is important, because in the long run, impact of the program is in large measure determined by whether the existence of the program and resulting experiences with eligible workers change employer perceptions of the productivity of eligible workers in a positive direction. If the very fact that the fereral government has chosen to subsidize the hiring of a particular group causes employers to anticipate even lower output from the group, the program will probably not be very effective at increasing the employment of the target group. If, on the other hand, participating employers discover that eligibles are better than they previously thought, the program will be very effective. Because employers are reporting that the TJTC eligibles they knowingly hire are just about as productive as other workers in the same job and some employers are rapidly expanding their hiring of TJTC eligibles, the tax credit may be having the desired effect of raising some employers' opinions of the productivity of disadvantaged workers. Because there is no longitudinal data on employer beliefs about the productivity of TJTC eligibles or disadvantaged individuals in general, there is no way of testing this speculation.

Another plausible interpretation of the results is that the growth of the TJTC program was due to the spread of knowledge about how to use the program. Once the costs of learning how to use the program are incurred, the costs of continuing to use it are very low. They may, in fact, fall as the firm develops better methods of recruiting TJTC eligibles and of selecting from the pool of eligibles who have applied. The reason why the eligibles that were hired are turning out to be just as productive as other new hires is that employers have not lowered their hiring standards to increase their hiring of TJTC eligibles. Their response to the program may have been to add eligibles to the pool of candidates considered, but to leave their hiring standards unchanged.

One of the major purposes of TJTC is to induce firms to hire disadvantaged workers for jobs that would otherwise be filled by nondisadvantaged workers or not have existed at all. There are two ways changes in hiring outcomes might occur, as follows:

- The firm could take TJTC eligibility into account when deciding which job applicant to select.
- the firm might adjust its recruitment practices so as to increase the number of TJTC eligibles that are applying to the firm.

Each of these mechanisms will be examined in turn.

If final selections are to be influenced by TJTC, the hiring decision maker must know or at least suspect that the individual is eligible for TJTC. Before September 1981, it was possible for an employer to apply for TJTC certification of employees who had been hired many months previously at a time they were not known to be eligible for TJTC. Omitting cooperative education students (who were certified automatically), roughly two-thirds of the TJTC certifications were retroactive; that is, they were made after the eligible employee's first day at work. Obtaining a certification retroactively is not, however, conclusive evidence that the hiree was not known to be eligible when hired. The employer might have known the individual was eligible when the hiring decision was made, but decided to postpone requesting a certification because it was a particularly busy period or because of a desire to see if the worker did okay during a tryout period.

The only way to learn whether the employer was aware of the worker's eligibility at the time of the hiring decision is to ask the employer. Employers that hired TJTC eligibles between January 1980 and September 1981 were asked, "How many of the employees did you know or think might be eligible before you hired them?" This question was used to calculate the share of TJTC-certified hires prior to September 1981 who were known to be eligible at the time they were hired. The results are presented on line four of table 2.10. An unweighted average of these percentages for the population of participating firms is 29 percent. Unweighted averages tend to overrepresent small users, however. Weighting by size increases the estimate of knowledgeable hiring to 48 percent. Weighting by the number of subsidized hires prior

TABLE 2.10

IMPACT OF TJTC ON THE RECRUITMENT AND SELECTION OF DISADVANTAGED WORKERS

	All Firms That Have Heard of TJTC	Participants Only			
		Not Weighted by Size	Weighted by Size	Weighted but Not Subsidized Hires 1/80-9/81	Weighted by Subsidized Hires After Sept. 1981
Percent tried to select eligibles	15	25	50	80	81
Percent tried to certify eligibles	32	40	75	89	90
Opinions of TJTC eligibles: better = 1 poorer = 1	-.26	17	.03	-.05	.04
Percent of 1980-81 TJTC-certified hires who were known to be eligible during 1980-81	---	29	48	64	66
Percent whose choice was influenced by knowledge of TJTC eligiblity during 1980-81	---	40	39	35	35
Percent initiated requests for TJTC-eligible referrals	18	26	56	80	82
Percent agreed to accept or asked for referrals of TJTC eligibles	33	43	78	89	90
Percent planning to ask for TJTC-eligible referral when an unskilled opening occurs	36	59	73	89	90

NOTE: Column 2 is weighted by the inverse of the selection probability. Columns 1 and 3 are weighted by establishment size and the inverse of the probability of selection. Columns 4 and 5 are weighted by the number of subsidized hires and the inverse of the probability of selection.

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to September 1981 produces higher estimates. The proportion of all subsidized hires that were known to be eligible prior to being hired is 64 percent.

After September 1981, all subsidized employees had to be known or at least suspected to be eligible before they started work, since requests for certification of eligibility had to be made on or before the first day of work. When the firms are weighted by the number of subsidized hires after September 1981, the percent of firms who said they knew they were hiring eligibles before September 1981 is 66 percent. Thus, firms who continued to use the program after September 1981 were no more likely to have been participating knowledgeably before the changes were made than those who reduced their TJTC claims because of the tightening of eligibility rules.

Employers who knew or thought that they were hiring TJTC eligibles were then asked, "How much did this possibility of eligibility increase the applicant's chance of being hired?" Again, influencing the hiring decision is one of the prime objectives of the TJTC program, yet relatively few firms reported being influenced. In unweighted data, only 17.9 percent of the participating firms reported that a candidate's eligibility influenced their hiring decision a great amount," and only 15 percent reported that it influenced their decision "a moderate amount." Yet 23 percent reported that their decision was "not very" influenced, and 46 percent reported not being influenced "at all."

A scale was devised in which "a great amount" was assigned a value of 1, "a moderate amount" a value of 2/3, "not very much" a value of 1/3, and "not at all" a value of 0. The weighted and the unweighted averages of this scale for participating firms were slightly more than 1/3. Thus, large users and users who continued to be large users after September 1981 were no more likely to report allowing hiring selections to be influenced by a job candidate's eligibility than the group of all participants.

This raises the following question: If large users are not more likely to be giving hiring preferences than small users, why have they become large users? Is being a large user simply a consequence of having many openings for unskilled workers, or are some employers consciously trying to become big users of TJTC without changing their hiring standards (i.e., giving preference to TJTC eligibles)?

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The percentage of firms consciously trying to select eligibles is significantly higher than the percentage reporting that hiring selections were influenced by a job candidate's eligibility. Column four (participants weighted by subsidized hires in 1980-81), for instance, has 80 percent trying to select eligibles but only 35 percent allowing hiring selections to be influenced. This discrepancy apparently means that many companies were trying to recruit among groups that were likely to be eligible; but that, once a suitable field of applicants was assembled, an individual's eligibility did not influence the employer.

There are several ways for an interested employer to increase the number of tax-credit-eligibles considered for its jobs. The employer could recruit at high schools that serve disadvantaged neighborhoods or could advertise in media that target the disadvantaged. A more reliable way would be to rely on referrals from the employment service or some other organization that helps the disadvantaged find employment.

The last three lines of table 2.10 examine referral relationships with such organizations. Employers were asked (1) if they had requested TJTC referrals from the employment service or another governmental agency, (2) if they had agreed to accept TJTC referrals upon request from such an agency, and (3) if they planned in the future to ask for referrals of tax-credit-eligible employees when an unskilled job opening occurs.

As might be expected, the column for all firms has the lowest percentages for requesting referrals, 18 percent; accepting referrals, 33 percent; and planning to ask for referrals in the future, 36 percent. The figures in columns two and three, all participants unweighted and weighted by size, are consistently smaller than the numbers in columns four and five. The probability of initiating a request for eligible referrals is 27 percent when participating employers are not weighted by size, 56 percent when they are weighted by size, and 80 percent where weighted by subsidized hires in 1980-81.

The probability of asking for or agreeing to accept referrals shows a similar pattern. This implies that large firms and large users are more likely to utilize referrals of TJTC eligibles than small users. This explains the relatively high percentage of large users who claim to be trying to select eligibles but who also report not allowing eligibility to influence their selections from a pool of applicants.

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NOTES

1. These statistics and all other statistics reported in this chapter are estimates of population characteristics rather than sample characteristics. The data have been weighted by the inverse of the probability that the employer was included in the sample and interviewed. The frame from which the sample was taken was a list of all employer establishments in the records of the Unemployment Insurance Tax System in the first quarter of 1979 in about 100 rural and urban counties dispersed around the nation. The counties selected were not intended to be geographically representative of the United States. The list was stratified into seven size groups. The largest establishments were certain to be included in the sample. Depending on the county the smallest establishments had probabilities of selection between .0043 and .10. The weighting factor also reflects nonresponse, so employers who wish to be interviewed are represented in the data by other employers in the same size class. For more on the sample, see Appendix 1A of Subsidizing On-the-Job Training (1982). Tables of sample characteristics are discussed in Appendix A.

2. Because the 1980 survey contained a few questions about TJTC and WIN tax credits and the respondent may have been induced to become and remain informed by that contact, this number may be an upward-biased estimate of the proportions of all employers who have "heard" of TJTC. Given the mention of TJTC in the previous interviews and the prevalence of television advertising of TJTC, most of the respondents who report not having heard of TJTC probably did at one time hear something about the program but have since forgotten about it.

3. Shares of employment at establishments with a particular characteristic are calculated by weighting the raw data by establishment employment and the inverse of the probability the establishment was included in the sample.

4. The concept of establishment being used in this study does not exactly correspond to place of doing business. When a group of stores under one management had centralized the hiring function for a locality and one individual was able to answer questions about the entire group, the group of stores was handled as one establishment. The unit of analysis is really hiring decisionmakers. The word establishment, employer, and company are used interchangeably. Firm or corporation refers to the larger entity when their is more than one establishment in the firm.

5. These statistics are most probably an underestimate. The national headquarters of one of the fast food chains that was a big user of TJTC happened to be included in our sample. It could not be included in the data analysis, however, because TJTC utilization statistics were reported for the nation as a whole and not for the establishment that had been included in the sample frame.

6. A conversation initiated by someone else in the firm seems to have had a strong association with usage. This could reflect a tendency of our respondents to hear of such conversations only when they produced a favorable outcome, such as referrals of TJTC eligibles and receipt of the subsidy.

7. Since this single statistic is probably the best summary characterization of the cost-effectiveness of the program, a discussion of its robustness is in order. The use of TJTC is highly skewed, so just a few employers in the sample account for half of all the TJTC certifications reported by our respondents. As a result, all statistics that are weighted by numbers of subsidized employees are subject to considerable sampling error. Weighting by the inverse of the probability of selection somewhat reduces the problem, because this weight is negatively correlated with numbers of subsidized worker. Table A.10 reports an estimate of the population proportion of subsidized hires that were at firm's reporting selecting TJTC eligibles. The corresponding sample proportions (i.e., no weighting by selection probability) are .46 and .50.

8. Employers who had not participated in the program typically did not know which of their current employees are eligible for TJTC and may not even have know what makes a person eligible. Their opinions may more often reflect prejudice rather than actual experience. Although the employers who participated in the program typically had a chance to observe directly how well particular TJTC eligible employees did, there seldom was a basis for objective measurement of productivity and their opinion is probably some mixture of previous prejudices and recent experience.

CHAPTER 3

MULTIVARIATE MODELS OF EMPLOYER PARTICIPATION IN TJTC AND ITS EFFECTS UPON HIRING POLICIES

This chapter reports the results of multivariate analysis of employer knowledge of TJTC, the referrals of TJTC eligibles, and employer use of the TJTC.

3.1 Theoretical Framework

The Targeted Jobs Tax Credit is a recruitment subsidy; that is, it only subsidizes newly hired workers, not workers already employed by the firm. A subsidy of 50 percent of the wages of eligible new hires is not equivalent to a 50 percent reduction in the market wage of this type of worker. First, no payment is made for workers already employed by the firm, and second, the firm receives the payment only if it applies for the subsidy and verifies the eligiblity of new workers for subsidization. Even a firm that is aware of the existence of such a program may not have all the necessary information about which job applicants are eligible and which are not. The cost of obtaining this information, of getting the necessary government certifications, and then applying for the subsidy may deter some firms from participating in the program.

The Decision to Participate in TJTC

This section develops a simple model of the TJTC participation of a profit-maximizing firm that buys inputs and sells outputs in competitive markets. For simplicity, targeted labor (L) is treated as a single factor of production, and W represents the market price of this factor. Suppose the federal government offers the firm a subsidy of proportion S of the wages of all newly hired targeted workers. If L_o is defined to be the number of targeted workers employed by the firm in the period prior to the subsidy offer, and t to be the periodic rate of turnover of subsidized workers, the total subsidy payment made to the firm is $SW[L - (1-t)L_o]$.[1] L_o is assumed to be greater than or equal to zero.

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To participate in a subsidy program, the firm must bear both fixed and incremental costs. Fixed costs involve such factors as making the initial application for the subsidy and setting up a system to evaluate job applicants for their eligibility. An additional fixed "cost" is the fear that participation may entail closer government scrutiny of tax records and hiring practices. Incremental costs of hiring workers through these programs are the extra costs of recruiting, screening, and verifying the eligibility of an additional subsidized worker. If new hires from the target group are less productive or more likely to quit or be fired than new hires not from the target group, there are additional incremental costs. Suppose we represent these participation costs by C and assume that they are a linear function of the number of subsidized workers. That is:

$$(1) \quad C = a + b(L - (1 - t)L_o)$$

where

a is the fixed cost of participation, $a > 0$; and

b is the marginal cost of participation per subsidized worker, $b > 0$.

The firm will elect to participate in the program if the benefits from doing so exceed the costs. Because the cost of participation is linear in the number of subsidized workers hired, the first-order condition for a maximum of profit with respect to L is the same for the participating firm whether the subsidy is marginal or on <u>all</u> units of targeted labor. Thus, the firm's profit function evaluated at the effective post-subsidy wage of $(1 - S)W + b$, after subtracting participation costs and the subsidy on the previously employed workers, can be used to express profits when the firm participates. Letting π be the profit function and P be the vector of all other prices, the net benefits to participation, B, can be expressed as:

$$(2) \quad B = \pi(P, (1 - S)W + b) + (b - SW)(1 - t)L_o - a_o - \pi(P,W)$$

The firm will participate only if $B > 0$.

Because the firm's profit function is continuous in W, there will exist some subsidy rate (for finite values of a) such that the firm can be induced to participate in the program; that is, there must be some value of S for which $B > 0$. Suppose we let S^* represent the subsidy rate that sets $B = 0$.

At any subsidy greater than S*, the firm will participate, and at any rate less than S* it will not. At any given level of subsidy S, the probability that the firm participates is equal to the probability that S exceeds S*. The variable S*, therefore, is a convenient device for observing the impact of firm characteristics on the likelihood of participation. Any characteristic of the firm that increases (or decreases) S* decreases (or increases) the probability of participation in a program with subsidy rate S.

To observe the effects of various characteristics of the firm on S, we can convert equation (2) into a more easily interpretable form. First, we approximate the difference between the profit function evaluated at the market wage and at the subsidized wage with a second-order Taylor series.[2] Then at S, equation (2) becomes:

$$(3)\quad \frac{\partial \pi(P,W)}{\partial W}(b - SW) + \frac{\partial^2 \pi(P,W)}{\partial W^2}\frac{(b - SW)^2}{2} + (b-SW)(1 - t)L_o - a = 0$$

The profit function has the property that its derivative (with respect to W) is the negative of the level of labor hired at that wage (i.e., the wage if no subsidy is offered or accepted). If we let g be the autonomous periodic growth rate of the firm's labor demand, the number of targeted employees would be $(1 + g)L_o$, assuming no subsidy. Using this expression and rearranging terms in equation (3) gives us an implicit function of the minimum acceptable subsidy in terms of various characteristics of the firm, including η, the elasticity of demand for the targeted labor.

$$(4)\quad 1 - \frac{\eta}{2}\left(S - \frac{b}{W}\right) - \frac{(1 - t)}{(1 + g)} - \frac{a}{(S^*W - b)(1 + g)L_o} = 0$$

Impact of characteristics of the firm and the local labor market. Equation (4) gives us a means of determining the impact of firm characteristics upon the probability of participation in a program, with given subsidy rate S. For example, differentiating implicitly with respect to L_o yields:

$$(5)\quad \frac{\partial S^*}{\partial L_o} = \frac{-a}{(S^*W - b)(1 + g)L_o^2} \Big/ \left(\frac{-\eta}{2} + \frac{Wa}{(S^*W - b)^2(1 + g)L_o}\right) < 0$$

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Equation 5 implies that, ceteris paribus, the more targeted workers a firm employed prior to the subsidy offer, the lower is the minimum subsidy rate necessary to induce participation. Therefore, we would expect higher participation rates among large firms and among firms that hire larger proportions of unskilled labor (since firms with either or both of these characteristics should have higher absolute numbers of targeted employees). Observe that it is the existence of fixed costs of participation that cause this effect. If $a = 0$, the effect of L_o is also zero.

Using this technique, we can determine that the following variables will positively affect the likelihood of participation:

- The firm's total employment.
- The growth rate of the firm's employment.
- The proportion of the work force in low-skill occupations.
- The rate of turnover of unskilled workers.
- The elasticity of demand for unskilled labor. The labor demand elasticity can be expected to vary with such characteristics as the price elasticity of product demand, the elasticity of substitution between skilled and unskilled workers, the share of cost going to unskilled workers, and the type of industry.

The parameter b in equation (5) is the marginal participation cost of each subsidized worker. The derivative of S* with respect to b is the inverse of the wage rate. Thus, anything that increases b reduces the probability of participation. The marginal participation cost may be expected to vary with a number of characteristics of the firm and its location. It is therefore expected that the following characteristics will positively influence participation:

- The proportion of the local population that is eligible. More eligible workers lower the cost of "searching" for a certified applicant.
- Flexibility in terminating unwanted workers. The purpose of these subsidies is to induce firms to hire difficult-to-employ workers. Many employers feel that hiring a subsidized worker means they are taking a greater risk that things will not work out. If the firm can easily correct its mistake by firing the worker, the risk is minimized. Thus, we anticipate that non-union firms that have a low firing threshold will be more likely to participate.

3 58

- Proportion of workers who are full-time: Marginal participation costs are the same for each worker, regardless of the number of hours worked. They are proportionately lower, therefore, for full-time workers.
- On-the-job training (OJT) that is general rather than specific The turnover rates of TJTC eligibles will probably be higher than for other competing workers. If OJT is extensive and specific to the firm, these higher rates of turnover will impose significant costs on the firm and raise the marginal cost of participation. If training is general and workers pay for the training, higher turnover rates will not be particularly burdensome.
- An employer practice of hiring untrained workers and training them rather than hiring already trained and experienced workers for that same job. The marginal costs of participation will be lower in these circumstances because the firm will already be accustomed to providing the additional training that TJTC eligibles would probably require. Such a practice may be signaled by a tendency of starting wage rates to be below those typical for the job or for training to be greater than what is typical for the job.
- Being prevented from setting lower starting wage rates by minimum wage legislation. TJTC eligibles are perceived to have poorer work habits and to be less skilled than noneligibles. The high unemployment experienced by these groups is partly a consequence of their inability to overcome this stigma by offering to work at a wage that is below the legal minimum. Firms that in the absence of minimum wage legislation would have offered jobs paying below the minimum wage are probably the firms that would have employed these workers if there had not been a minimum wage. Being forced to pay a higher wage has reduced employment at these firms and probably induced the firm to raise the qualifications and experience required to be hired. TJTC lowers the cost of hiring eligibles, and these firms will generally have less difficulty adapting their hiring and training to eligible workers than firms that pay wages that are considerably above the minimum wage.

The parameter a in equation (5) is the fixed cost of participation in the program. The fixed cost of participating involves the costs of learning what the rules of the subsidy program are, how the paperwork must be processed, and how to obtain qualified eligibles. The lower these costs are, the higher is the probability that the firm will participate in the program. Consequently, we can predict that firms with the following characteristics will be more likely to participate in TJTC:

- Firms that have personnel directors. The personnel directors have more free time to learn about programs like TJTC than owners or plant managers, and they are also more likely to be targeted for outreach by agencies seeking to place TJTC eligibles.
- Members of local business organizations. These employers are much more likely to be contacted by government agencies and offered referrals of TJTC eligibles. This lowers the fixed costs of learning how to take advantage of the program. They also may get a sales pitch about TJTC at meetings or in a newsletter.
- Firms that are contacted by local program administrators.
- Firms that have participated in this or similar programs in the past. Once one has participated, the fixed costs of participating the next year decline almost to zero.
- Employers with a positive attitude toward government officials.
- Regular users of the employment service.

The policies of the local agencies administering the program influence both the fixed and marginal costs of participation and therefore are important determinants of participation. Administration of the TJTC is primarily in the hands of the local employment service offices. In some communities, employment service staff members have marketed TJTC by telephoning local employers and offering to come to their plants to help identify and then certify the TJTC eligibles who were working there. In other communities, employers who seek referrals of eligible workers or more information about the program get no help at all (in Wisconsin, for instance, when the federal contribution to administrative costs ran out in October 1979, certifications dropped to almost zero in the final three months of the year). Firms cannot participate in a program if they do not know who to contact locally about application and certification. Consequently, it is expected that participation (as well as familiarity) will be greater in communities in which there has been extensive promotion by the local employment service.

Similarly, the cooperative relationship between the local employment service office and the firms will have a bearing upon the likelihood of participation. Firms that have regular and frequent contact with the local job service people are more likely to get referrals of subsidy-eligible workers.

Determinants of Familiarity with Targeted Subsidies

Clearly, a firm that is ignorant of the existence of TJTC cannot participate. Twenty-three percent of all the respondents to the NCRVE Employer Survey reported that they had not heard of government tax credits for hiring the disadvantaged. It is important to know which firms were not aware of TJTC in 1982 and how those who were aware learned of the program. Clearly, the firm characteristics that influence participation should affect knowledge of the program, as well. Firms that benefit most from participation will invest the most in obtaining information about subsidies being offered.

Size is likely to be the single most important predictor of an employer's familiarity with subsidy programs. The potential payoff to knowledge about subsidy programs is likely to be greater for a large organization, so the top executive either spends more time learning about such programs or assigns the job to such specialized personnel as the controller, accountant, or personnel officer. In their study of the New Jobs Tax Credit, the nontargeted employment subsidy program of 1977-78, Perloff and Wachter (1980) found size to be the only significant variable in the equation estimating the likelihood of familiarity with the program. One would also expect the agencies responsible for administering these programs to concentrate their promotional efforts on larger establishments. Because large establishments are more likely to be hiring, there is a greater likelihood of placing a client through a personal contact with a large employer.

Employers who are well connected to sources of information (e.g., those who are members of a local business organization or who already use the employment service) would be more familiar with these programs. Personnel directors would probably be more likely to know about such programs than chief executive officers or owner/managers who have a thousand other things on their minds. Growing firms might be more aware of these programs for two reasons. First, they are more likely to initiate a contact with the employment service office. Second, the payoff for participating in recruitment subsidy programs (and therefore the payoff to investing in knowledge about such programs) is greater for the growing firm.

The most important geographic determinant of rates of familiarity is likely to be the enthusiasm and effectiveness of the local employment service office's promotion of the program.

3.2 Results

This section presents the results of a multivariate analysis of the determinants of TJTC use. A variety of indicators of TJTC knowledge and use were modeled as a function of the following characteristics of the employer: size of the establishment and firm; descriptors of the firm's work force composition; characteristics of the firm's personnel policies; and industry, state, and miscellaneous variables, such as whether the employers belong to a business organization and whether they report that they "avoid dealing with bureaucrats." The definition, means, and standard deviations of the variables used in the models are presented in table 3.1.

Knowledge

Table 3.2 presents the estimates from models of employer knowledge about TJTC. The dependent variables comprising the columns of the table are "employer had heard of TJTC or WIN" (observed p = .804), "employer had spoken to someone about usage of TJTC" (p = .295), "employer had initiated the contact about TJTC" (p = .093), and "government agency had initiated the contact about TJTC" (p = .129).

Establishment size had a positive and significant impact on all four indicators of knowledge. This means the larger the firm, the more likely the firm had heard of TJTC or WIN, the more likely someone at the firm had spoken to a government agency or another organization about TJTC, and the more likely the employer and the government agency had initiated a contact. Whether the establishment was situated within a multiestablishment firm affected only the initiator of a contact. The larger the ratio of firm to establishment employment, the more likely the employer initiated a contact about TJTC and the less likely a government agency initiated a contact.

As would be expected, the higher the proportion of new hires within the organization, the more likely the employer was to have heard of and been

TABLE 3.1

DESCRIPTIVE STATISTICS
FOR
INDEPENDENT VARIABLES

Variable	Mean	Standard Deviation	Description
Employment Size			
Log establishment size	2.912	1.475	Number of employees plus one.
Log firm/est. emp.	.490	1.188	Ratio of firm to establishment employment for multiestablishment firms.
Composition of Work Force			
Unionized	.103	.280	Collective bargaining coverage of nonsupervisory workers
Proportion new hires	.233	.200	Ratio of new hires in 1979 to sum of Dec 79 emp and new hires in 1979
Proportion under 25	.271	.256	Proportion work force under 25 in 1980.
Proportion craft	.162	.254	Proportion work force that are craft workers in 1979
Proportion white-collar	.470	.360	Proportion white-collar in 1979
Proportion managerial	.163	.204	Proportion managerial in 1979
Proportion part-time	.179	.274	Proportion part-time in 1979
Personnel Policies			
Has personnel office	.115	.319	Dummy for respondnet worked in the personnel office
Log length probationary period	2.806	1.242	Number of weeks in probationary period
No probationary period	.241	.428	Dummy for no probationary period
Layoff based on seniority	.410	.271	If there had to be permanent/temporary layoff of one-third of staff, would it be based on seniority or productivity scaled from one to zero.
Other Firm Characteristics			
Log cost of machinery	1.699	1.492	Cost of the most expensive machine the new hire will work with if purchased today
Log weeks to be fully trained	1.844	1.283	Weeks...for a new employee to become fully trained and qualified if he/she has no previous experience
Member of business organization	.510	.500	Firm or respondent a member of a local business organization
Avoids dealing with bureaucrats	.659	.315	Responses to "as much as possible I try to avoid having to deal with government bureaucrats" scaled from one to zero.
Profitable last year	.533	.310	Responses to "from a profit point of view, was 1981 a very good year, a pretty good year, not a good year, or a year of losses?" scaled from one to zero.

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TABLE 3.2

MODELS OF KNOWLEDGE OF CONTACTS ABOUT TJTC, AND WHO INITIATED THE CONTACT

(Ratio of |estimate/standard error| in parentheses)

Variable[a]	Employer Reports Having Heard of TJTC or WIN		Employer Spoken to Government Agency or Other Organization		Employer-Initiated Contact		Government-Agency-Initiated Contact	
Employment Size								
Log establishment size	.204***	(8.4)	.233***	(11.0)	.132***	(5.0)	.163***	(6.5)
Log firm/est. emp.	-.010	(.5)	.021	(1.0)	.087***	(3.6)	-.052**	(2.0)
Composition of Work Force								
Unionized	-.028	(.2)	.119	(1.2)	.186	(1.5)	.264**	(2.4)
Proportion new hires	.286***	(2.1)	.713***	(5.3)	.475***	(2.8)	.422**	(2.6)
Proportion under 25	-.351***	(3.4)	.082	(.8)	-.071	(.5)	.149	(1.1)
Proportion craft	.144	(1.2)	-.055	(.5)	.081	(.1)	-.206	(1.4)
Proportion white-collar	.198**	(2.0)	-.134	(1.4)	-.339**	(2.6)	-.045	(.4)
Proportion managerial	-.161	(1.2)	-.229	(1.5)	.057	(.3)	-.278	(1.5)
Proportion part-time	-.138	(1.4)	-.200	(1.9)	-.035	(.3)	-.273**	(2.1)
Personnel Policies								
Has personnel office	.287**	(2.5)	.345***	(4.1)	.149	(1.5)	.314***	(3.4)
Log length probationary period	-.041	(1.1)	-.046	(1.3)	.047	(1.0)	-.038	(.9)
No probationary period	.004	(.0)	-.051	(1.4)	-.321**	(2.2)	-.147	(1.1)
Layoff based on seniority	.006	(.1)	-.056	(.6)	-.185	(1.5)	.019	(.2)
Other Firm Characteristics								
Log cost of machinery	.030	(1.5)	.011	(.7)	.048**	(2.2)	-.001	(.1)
Log weeks to be fully trained	.018	(.9)	.036	(1.8)	.029	(1.1)	.024	(1.0)
Member of business organization	-.018	(.3)	.135***	(2.7)	.016	(.3)	.121**	(2.0)
Avoids dealing with bureaucrats	.322***	(3.9)	-.174	(1.0)	-.043	(.4)	.027	(.3)
Dependent Variable Mean	.804		.295		.093		.129	
-2 Log Likelihood	246.7***		537.5***		151.6***		272.2***	
Multiplier for Calc. Effect on P	.158		.208		.084		.112	

[a]Controls for industry and state were also included in the probit models. The sample size was 3412.

*Significant at the 10% level.
**Significant at the 5% level.
***Significant at the 1% level.

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contacted by an agency about TJTC. This variable also positively influenced both employer- and government-initiated contacts. Interestingly, firms with a younger work force (as measured by proportion of workers under 25) had a lower likelihood of knowing about TJTC. This variable did not affect contacts, however.

The occupational composition of the firm's workers did not have a strong influence on knowledge of or contacts about TJTC. Firms with a higher proportion of white-collar employees were more likely to have heard of TJTC or WIN but were less likely to have initiated a contact about it. The lower likelihood of initiating a contact is probably a result of the fact that white-collar employees were less likely to be eligible for TJTC and thus there was less incentive for employers to seek out tax credits.

Because the tax credit depends on the total earnings of the new hire, firms that hire many part-time employees have a lesser incentive to learn about and participate in TJTC. As expected, having a higher proportion of part-time employees did decrease the likelihood of awareness of or contact about TJTC. On the other hand, firms with a personnel office were more likely to know of and have made a contact about the tax credit program. Other personnel policy variables did not significantly influence the dependent variables.

Being a member of a business organization increased the probability that a firm had spoken to a government (or other) agency about the tax credit and increased the likelihood of a government-agency-initiated contact. Finally, the variable "avoids dealing with bureaucrats" was expected to be negatively related to contacts about TJTC, but while the sign was negative, the relationship was not statistically significant. On the other hand, this attitudinal variable had a significant positive effect on knowledge of TJTC.

Referrals

The models presented in table 3.3 deal with referral behavior of the Employment Services (ES) and employers. Using the same independent variables, models were estimated to explain the variables "firm had been requested by the

TABLE 3.3

MODELS OF TJTC REFERRAL REQUESTS

(Ratio of|estimate/standard error| in parentheses)

Variable[a]	Employer Has Been Asked by Referral Agency to Accept TJTC-Eligible Referrals		Employer Has Asked Referral Agency for TJTC-Eligible Referrals		Employer Plans to Ask Referral Agency for TJTC-Eligible Referrals	
Employment Size						
Log establishment size	.183***	(8.3)	.144***	(4.7)	.063***	(2.9)
Log firm/est. emp.	.005	(.2)	.029	(1.0)	.031	(1.5)
Composition of Work Force						
Unionized	.060	(.6)	.147	(1.1)	.023	(.2)
Proportion new hires	.451***	(3.2)	.818***	(4.2)	.168	(1.2)
Proportion under 25	-.026	(.2)	.070	(.4)	-.044	(.4)
Proportion craft	.131	(1.1)	.108	(.6)	.145	(1.2)
Proportion white-collar	-.075	(.7)	-.023	(.2)	.090	(.9)
Proportion managerial	-.127	(.8)	-.377	(.4)	-.169	(1.1)
Proportion part-time	.039	(.4)	-.094	(.6)	-.071	(.7)
Personnel Policies						
Has personnel office	.223**	(2.6)	.211*	(1.9)	.300***	(3.5)
Log length probationary period	-.023	(.6)	-.036	(.6)	.009	(.2)
No probationary period	-.072	(.2)	-.052	(.3)	-.321***	(2.8)
Layoff based on seniority	.085	(.9)	-.113	(.8)	-.314***	(3.2)
Other Firm Characteristics						
Log cost of machinery	.029*	(1.6)	-.018	(.7)	-.004	(.2)
Log weeks to be fully trained	.025	(1.3)	.0290	(1.0)	-.003	(.1)
Member of business organization	.121**	(2.3)	.146*	(1.9)	.099*	(1.9)
Avoids dealing with bureaucrats	.104	(1.3)	.001	(.1)	-.349***	(4.4)
Dependent Variable Mean	.213		.058		.212	
-2 Log Likelihood	269.3***		134.7***		195.6***	
Multiplier for Calc. Effect on $\bar{P}$	.167		.055		.167	

[a]Controls for industry and state were also included in the probit model. The sample size was 3412.

*Significant at the 10% level.
**Significant at the 5% level.
***Significant at the 1% level.

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ES or other agencies to accept a TJTC referral" (p = .213), "firm had requested ES or other agencies to refer TJTC eligibles" (p = .058), and "firm plans to ask for referrals when openings arise" (p = .212).

As in the models discussed earlier, establishment size and having a personnel office were positive and significant explanatory factors for the referral request models. Also, the proportion of the firm's work force that consisted of recent hires was positively related to being asked to accept a referral and asking for TJTC-eligible referrals. They were both more likely to request referrals and more likely to be approached.

Two personnel policies--having no formal probationary period for new workers and basing layoffs mainly on seniority--are interesting in that they had no particularly strong influence on asking for or having been asked to accept TJTC-eligible referrals, but they both had strong negative influences on the likelihood of asking for referrals in the future. These effects can be explained as follows. Seniority provisions are generally accompanied by strong call-back provisions, so firms are unlikely to request TJTC-eligible workers when they must first recall their own laid-off workers. Having no probationary period may signify that firms are extremely careful at the time of hiring, so that they are less likely to try out a TJTC-eligible hire.

Being a member of a local business organization increased the likelihood of being asked, asking, and planning to ask for TJTC-eligible referrals. Avoiding bureaucrats had a significant negative effect on planning to ask for referrals in the future, but had essentially no effect on having asked for or having been asked for referrals.

Participation

Table 3.4 examines models of how firms tried to use TJTC and whether they succeeded in actualed obtaining a subsidy. The dependent variables in this table are "company makes an effort to select new employees that are tax-credit-eligible" (p = .055), "company makes an effort to certify tax-credit-eligible workers that have been hired" (p = .144), "company hired a tax-credit-eligible worker between January 1980 and September 1981" (p = .102), and "company hired and certified a tax-credit-eligible worker after September 1981" (p = .056).

TABLE 3.4

MODELS OF TJTC PARTICIPATION
(Ratio of|estimate/standard error|in parenthesis)

Variable[a]	Company Tried to Select Tax-Credit-Eligible Worker		Company Tried to Certify Tax-Credit-Eligible Workers It Has Hired		Establishment Hired A Tax-Credit-Eligible Worker Between January 1980 - September 1981		Establishment Hired and Certified a Tax-Credit-Eligible Worker Since September 1981	
Employment Size								
Log establishment size	.121***	(3.7)	.198***	(8.2)	.222***	(8.3)	.283***	(8.2)
Log firm/estab. emp.	.110***	(4.1)	.073***	(3.3)	.008	(.3)	.054*	(1.8)
Composition of Work Force								
Unionized	.017	(.1)	-.049	(.5)	.020	(.2)	-.269	(1.0)
Proportion new hires	.541***	(2.7)	.430***	(2.8)	.477***	(5.6)	1.331***	(6.2)
Proportion under 25	-.019	(.1)	.089	(.7)	.274**	(2.0)	.365**	(2.0)
Proportion craft	-.168	(.9)	.166	(1.2)	.043	(.3)	-.157	(.8)
Proportion white-collar	-.191	(1.3)	-.046	(.4)	-.113	(.9)	-.064	(.4)
Proportion managerial	-.340	(1.2)	-.052	(.3)	-.093	(.4)	-.910**	(2.6)
Proportion part-time	.039	(.2)	.096	(.8)	.056	(.4)	-.007	(.0)
Personnel Policies								
Has personnel office	.347***	(3.0)	.296***	(3.3)	.192*	(1.9)	.203*	(1.7)
Log length probationary period	-.191***	(3.4)	.008	(.2)	-.028	(.6)	-.132**	(2.2)
No probationary period	.347*	(1.9)	-.223*	(1.7)	-.207	(1.4)	.160	(.8)
Layoff based on seniority	-.068	(.5)	-.074	(.7)	-.091	(.2)	.111	(.7)
Other Firm Characteristics								
Log cost of machinery	.005	(.2)	.008	(.4)	-.001	(.1)	.063**	(2.2)
Log weeks to be trained	.040	(1.3)	-.001	(.0)	.006	(.2)	.019	(.6)
Member of business organization	.225***	(2.8)	.096*	(1.6)	.164**	(2.5)	.071	(.9)
Avoids dealing with bureaucrats	-.515***	(4.2)	-.412***	(4.6)	-.110	(1.1)	-.313**	(2.4)
Dependent Variable Mean	.055		.144		.102		.056	
-2 Log Likelihood	182.5***		313.1***		301.6***		296.1***	
Multiplier for Calc. Effect on $\overline{P}$	.052		.123		.092		.053	

[a]Controls for industry and state also in the probit model. The sample size was 3412.

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.

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As with the models reported in the previous tables, establishment size, proportion of the work force that was newly hired in 1981, and having a personnel office were all positive and significant determinants of the TJTC use variables. The variable measuring whether the establishment was situated within a larger firm, log firm/establishment employment, was a significant, positive factor for increasing the likelihood that an employer tried to select tax-credit-eligible workers and tried to certify currently hired tax-credit-eligible employees. However, it was not significant in explaining whether the establishment had actually hired a TJTC-eligible worker.

The proportion of the work force under 25 was positively related to actual hiring of a TJTC-eligible worker, as would be expected. Firms with higher proportions of skilled, white-collar, or managerial workers generally had lower likelihoods of trying to hire or having actually hired a tax-credit-eligible worker, but most of the parameter estimates are not statistically significant.

Being a member of a business organization increased the likelihood of trying to select tax-credit-eligible workers and receiving a certification for hiring tax-credit-eligible workers prior to September 1981. This variable was also positively related to the other two dependent variables, but was not statistically significant. Reporting that they avoid dealing with bureaucrats significantly decreased the likelihood of employers trying to select tax-credit-eligible workers or hiring and certifying such workers.

Choosing the New Hire

Given the pool of applicants, TJTC can influence the choice of which applicant is hired only if the hiring decision maker knows or suspects which applicants are eligible and allows this knowledge to influence the selection. Employers who had received subsidies for employing TJTC eligibles prior to September 1981 were asked how many of these eligibles were known to have been eligible when hired. Weighting these answers by the number of subsidized workers claimed prior to September 1981 results in an estimate of the proportion of TJTC workers that were known to be eligible when they were hired of 64 percent. Employers who had known that at least one of their new hires was eligible for TJTC prior to the hiring decision were asked, "How much did this

possibility of eligibility increase the applicant's chance of being hired?" The answers to these questions were compiled into a scale running from zero (for an answer of "not at all") to one (for an answer of "a great amount"). The mean of this scale is .30.

Which pre-ERTA users of TJTC were more likely to have known of TJTC and which users reported having their hiring choices influenced by TJTC? To answer these questions, regressions were run predicting both the proportion of TJTC-subsidized workers that were known to be eligible when hired and the degree to which hiring selections were influenced by this knowledge. These OLS regressions are presented in table 3.5. A glance at the first column of the table reveals that, among the users of TJTC, the employers that were aware of a new hire's TJTC eligibility before making the hiring decision tended to--

- have more employees,
- have no probationary period or a very short one,
- base layoffs on productivity rather than seniority,
- have less expensive machinery,
- not mind dealing with government officals.

In other words, many of the characteristics that were hypothesized to increase the probability of participation also seemed to predict which participants were the knowing or conscious participants in the program.

The regression predicting the employer's report of TJTC's influence on who was selected from the pool of applicants is presented in the second column of table 3.5. These regressions were estimated on a sample of employers that were aware of at least one of their TJTC-subsidized workers' eligibility when they hired the worker. The firms that reported having hiring choices influenced by TJTC were those--

- with fewer employees,
- with a generally unskilled work force,
- who nevertheless required a great deal of training (in other words, a work force that lacked previous experience and training and that therefore had to be trained on the job),
- who were members of a local business organization,
- who had little difficulty in firing employees after the probationary period is over.

TABLE 3.5

IMPACT OF TJTC USER ON HIRING BEHAVIOR
(t-statistics in parenthesis)

Variable[a]	Proportion of TJTC-Subsidized Employees Known To Be Eligible		TJTC Influenced Who Was Selected		Belief That TJTC Eligibles Are Better (+1) or Worse (-1) Than Noneilg.	
Log Establishment	.071***	(3.5)	-.037**	(2.0)	.006	(.2)
Log Firm/Est. Emp.	.010	(.5)	-.024	(1.3)	.050*	(1.8)
Composition of Work Force						
Unionized	.042	(.5)	.055	(.7)	.070	(.5)
Proportion new hires	.049	(.4)	-.086	(.7)	-.236	(1.2)
Proportion under 25	.143	(1.2)	.084	(.8)	.007	(.0)
Proportion craft or white-collar	-.038	(.6)	-.151***	(2.4)	.005	(.0)
Proportion part-time	-.162	(1.3)	-.156	(1.4)	-.130	(.8)
Personnel Policies						
Log length of probationary period	-.057	(1.6)	-.026	(.7)	-.082	(1.5)
No probationary period	.200*	(1.7)	-.082	(.7)	.058	(.3)
Layoff based on seniority	-.227**	(2.4)	-.094	(1.1)	-.248*	(1.7)
Difficult to fire	.079	(.8)	-.227**	(2.4)	.159	(1.1)
Personnel office					.191*	(1.8)
Other Firm Characteristics						
Log cost of machinery	-.048***	(2.6)	.004	(.2)	.007	(.3)
Log weeks to be fully trained	-.018	(.8)	.050***	(2.5)	-.025	(.8)
Member of business organization	.040	(.8)	.108**	(2.3)	-.175**	(2.3)
Avoids dealing with bureaucrats	-.131	(1.6)	.071	(1.0)	.081	(.7)
Profitable last year	.111	(1.3)	.112	(1.5)	-.122	(.9)
Government Agency Outreach						
Agency initiated contact	.013	(.2)	.044	(.9)	-.115	(1.4)
Agency offer of TJTC referrals	.021	(.4)	.042	(.9)	-.010	(.1)
R^2	.218		.207		.137	
No. of Observations	313		281		365	

[a]Controls for industry and state also in model.

*Significant at the 10% level.
**Significant at the 5% level.
***Significant at the 1% level.

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Merging the results of the two regressions produced the following picture.

The firms that consiously gave preference to TJTC eligibles in hiring had two characteristics:

- They could correct hiring mistakes easily by firing or laying off a new hire that did not work out.
- They did not expect their new employees to come to the firm already experienced and highly trained. The firm followed a strategy of hiring unskilled and inexperienced workers and providing the extra training the less-qualified workers needed.

It should also be noted that the coefficients on the two government agency outreach variables are not negative. Although the coefficients are very small and not significantly different from zero, they are evidence that the users who were recruited into the program by a government agency initiated contact or referral offer were not any less likely to use the program consciously and aggressively than firms who began their participation without being initially contacted by an agency.

The third column of table 3.5 presents the results of a regression predicting employer beliefs about the productivity of TJTC eligibles. The regressions were estimated on a sample of past participants in TJTC. The employers with the most favorable opinion of TJTC eligibles were--

- hiring for a store or plant that was part of a large multi-establishment corporation;
- members of the personnel staff of the firm rather than the owner, the manager, or some other official of the firm;
- not members of a local business organization;
- able to lay off workers on the basis of productivity rather than seniority.

There was no tendency of those who received contacts from the government agency about the program to have more favorable opinions of eligibles than those who became users without such contacts. Since longitudinal data on these beliefs are not available, there is no way of knowing whether these opinions existed prior to TJTC participation or whether they reflect recent experience with TJTC eligibles.

The tendency of those employers who must lay off workers on the basis of seniority to have a more negative opinion of TJTC eligibles probably reflects a tendency of these firms to draw from a generally more qualified pool of job applicants and to be more averse to risk when making hiring decisions. This may also explain why members of local business organizations had a lower opinion of TJTC eligibles. Another possibility, however, is that such employers were more likely to have been persuaded to participate on altruistic (i.e., help out the disadvantaged) grounds than other participants.

NOTES

1. Note that it has been implicitly assumed that the firm is constrained from firing all of the targeted workers currently employed and replacing them with subsidized new hires. Most firms are at least partly constrained from simply firing workers without apparent cause. This assumption is reasonable because the training costs for new workers often exceed the magnitude of the subsidy, and because there have been as yet no documented cases of experienced workers being fired to hire a subsidy-eligible worker.

2. The truncation of the Taylor series at the second-order term is not as limiting as it may appear. If we assume that the labor demand function is isoelastic (like the restricted Cobb-Douglas, for example) and that the marginal product of labor approaches zero as labor increases without bound the approximation will be exact. These assumptions are not far removed from the standard production theory. For a more complete description of the theory see Montgomery (1982).

CHAPTER 4

DOES ADVERTISING ONE'S ELIGIBILITY FOR TJTC HELP ONE GET A JOB?

The designers of TJTC expected eligible job seekers to use their eligibility as a selling point when they contacted employers. Job search counselors, however, have been reluctant to recommend that disadvantaged job seekers use TJTC as a part of their sales pitch to potential employers.

Two experiments (Burtless and Cheston 1981; Moran et al. 1982) were conducted in 1980 in which unemployed welfare recipients were taught to announce their eligibility for TJTC to employers when they applied for a job. In both experiments, the group that received this training had a lower placement rate than other eligible welfare recipients who did not receive this training. In the Dayton experiment (Burtless and Cheston 1981), random assignment was used to select the group to be trained. The reduction in the placement rate was statistically significant.

The results of the Racine/Eau Clair, Wisconsin quasi-experiment (Moran, et al. 1982) are particularly interesting. The study compared WIN clients who were served prior to the initiation of the experiment to clients who were served after the experiment began. Holding other characteristics constant, the WIN clients who were trained to tell employers about their TJTC eligibility were half as likely to obtain a job. A follow-up of some of the WIN clients in the experimental and control groups in Racine found that it was those WIN clients who followed instructions and brought up their eligibility when contacting employers who were least likely to find a job. Of the 32 reporting that they used TJTC as a marketing tool, only 2 (6 percent) found jobs eligible for TJTC certification. Of the 26 who initiated discussion of their TJTC eligibility, 22 percent found jobs eligible for TJTC certification.

The results of these experiments suggest that when welfare recipients announce they are TJTC-eligible, it tells most prospective employers something that the employers did not previously know, that is stigmatizing, and

that reduces the job seeker's chances of being hired. It seems that for most employers, signaling one's welfare recipiency has a powerful stigmatizing effect that is not outweighed by the possibility of the employer receiving a tax credit. Being a youth from a low-income family should not be equally stigmatizing, however. Furthermore, it is probable that experience with the TJTC program is changing employer views of TJTC eligibles. It may be that the stigma of being TJTC-eligible has declined with time.

This issue may be addressed in a more recent data set by examining how an employer's assessment of the desirability of hiring a job applicant is influenced by including "eligible for TJTC" in the comments section of a job application. The 1983 NIE/NCRVE Employer Hiring Decisions Survey obtained ratings from 850 employers around the country of 11 different completed job applications. One of the features of the job applicant that was varied randomly was eligibility for TJTC. By regressing the ratings assigned on the qualifications exhibited in the applications, and interactions between TJTC and such characteristics of the firm as size, amount of training offered, and industry, the net effect of TJTC eligibility and how it varies across firms can be determined.

4.1 Theory

Bishop, Barron, and Hollenbeck (1983) suggest that, to a potential employer, the "true" present value of labor services offered by a new employee is a random variable.

The theory and models developed here represent the behavior underlying the summary of information into a screening index that determines whether a job applicant gets an opportunity to interview for a job. Each employer in the survey was presented with a job description and 11 applications and was asked to rate the applicants on a hiring priority scale ranging from 0 to 200. To standardize the ratings to the firm's hiring standards, the following directions were given:

For a job similar to the one described above, assume--

> 50 points represents the worst applicant you ever hired (as perceived at the time of hiring, NOT what the new hire's performance actually turned out to be).

100 points represents the average applicant you hire.

150 points represents the best applicant you ever hired (as perceived at the time of hiring, NOT what the new hire's performance actually turned out to be).

The index is not intended in any way to measure an applicant's absolute productivity, but is a relative measure of hiring priority to be used to compare more than one applicant for the same job description.[1] The instructions are framed so that 100 points equal the anticipated difference between the firm's best new hire and its worst.

Assume that employers believe an applicant's true productivity, V, can be predicted by a set of attributes, some of which are observable and some of which are not. Denote these two sets as X_O and X_N. The following equation determines productivity for the "j"th job/firm:

$$(1) \quad V_{ij} = f^j(X_{Oi}, X_{Ni}) \text{ for } j = 1 \ldots$$

where

V_{ij} is the productivity of the ith individual in firm j's job;

X_{Oi} are i's observable attributes that are related to productivity;

X_{Ni} are i's unobservable attributes that are related to productivity;

f^j is the function that relates productivity in the "j"th job to the characteristics of the individual.

Hiring decisionmakers try to evaluate the information provided by job applicants and predict their potential productivity. Lacking information on X_{Ni}, they must instead generate an estimate of expected productivity that depends upon observable characteristics only. Therefore--

$$(2) \quad S_{ij}(I) = E(V_{ij}|X_{Oi}) = g^j(X_{Oi})$$

Particular pieces of information enter the X_{Oi} vector, either because they have direct effects on productivity in the structural model in equation (1) or because they are believed to be correlated with the unobservable determinants of productivity, X_{Ni}. For example, neatness on the application form may be taken as a signal for having a good attitude or being neat and careful. Reputation of one's school may be taken as a signal of how well trained or disciplined an individual is. Location of residence may be taken as a signal of socioeconomic status, and so on.

The g^j functions that describe the weight placed on particular pieces of information when interview invitations and hiring decisions are being made evolve through a trial-and-error process. Decisions to interview or to hire are made on the basis of the current g^j function. The success or nonsuccess of the applicant in the interview or on the job serves as the criterion by which the g^j function is revised. If the job applicants referred by a particular agency or school fail to make it through the interview or do poorly on the job, the fact that one is referred by that agency becomes a negative rather than a positive.

It is assumed that the g^j functions are very different for different jobs, so the empirical work deals with each job separately. The functions probably vary across firms, as well, but because no single hiring decision maker evaluated more than 11 completed job applications, it is not possible to estimate separate g^j functions for each firm. Instead, data from hundreds of firms are included in one regression. Firm and rater characteristics are assumed to shift the S_{ij} function up and down but slope coefficients on the job applicant characteristics, X_i, are not allowed to vary across firms except for a few specified interactions between individual and firm characteristics. Under these circumstance, OLS is appropriate.

Because the focus of the analysis is on which firms were most influenced by TJTC eligibility, the specified interactions are between TJTC eligibility and firm characteristics. The following linear model was estimated:

$$(3) \quad S_{ij}(I) = b_o + b_1 TJTC_i + b_2 X_i + b_3 Z_j + b_4 TJTC \cdot X_i^* + b_5 TJTC_i \cdot Z_j^* + e_{ij}$$

where

$S_{ij}(I)$ = hiring index scores for the "i"th individual;

$TJTC_i$ = a dummy variable that takes on the value of one when the individual is reported to be eligible for TJTC;

X_i = characteristics of applicant i displayed on the job application;

Z_j = vector of characteristics of the firm and the rater;

X_i^* = characteristics of applicant hypothesized to interact with TJTC; and

Z_j^* = vector of firm characteristics hypothesized to interact with TJTC.

The parameters that are estimates from equation (3) (i.e., the b_1) represent the marginal influence of the characteristic on the hiring priority score. Equation (3) was estimated for all occupations jointly and for each occupation separately. Applicant characteristics, data about the job and firm, and rater characteristics were in the models together. Only the effect of TJTC is discussed in this chapter. The data and the effect of the other determinants of the ratings are described in Appendix D. A fuller description of the methodology of the survey is provided in Hollenbeck and Smith (1984).

4.2 The Influence of Eligibility for TJTC

The average effect of TJTC eligibility on the hiring priority score was measured by entering a dummy for TJTC into the model. A positive and significant coefficient was obtained on this variable in the full sample. The average impact of TJTC was 2.1 points in the full sample, 2.2 points in clerical jobs, 1.7 points in retail jobs and 2.1 points in machine trades. Consequently, the hypothesis that knowledge of an applicant's TJTC eligibility actually lowers most employers' desire to hire the person is rejected. The positive effect of TJTC was small, however.

This and the theory developed in chapter 3 suggest that TJTC eligibility may make a positive impression on some employers but a negative impression on others. It was hypothesized, for instance, that employers who provided specific training would tend to avoid TJTC eligibles, whereas employers who provided general training would be attracted to them. One also may anticipate that TJTC's impact would depend on the credentials and experience of the job applicant. It may be hypothesized that TJTC eligibility is a negative for the candidate who otherwise looks very attractive, and is a positive for a job candidates with limited education and job experience. These hypotheses were tested by including interactions between a variety of firm and job applicant characteristics and TJTC eligibility in the statistical model predicting hiring priority ratings. The coefficients and relevant statistics on these variables are presented in table 4.1.

The interactions with applicant characteristics will be examined first. As hypothesized, the impact of TJTC eligibility was more positive when the

TABLE 4.1

EFFECTS OF TJTC ELIGIBILITY ON HIRING PRIORITY RATINGS
(t-statistics are in parenthesis to the right of the coefficient)

Variable	Full Sample		Clerical Applicants		Retail Applicants		Machine Trades Applicants	
TJTC-Eligible	11.1	(1.4)	7.3	(.5)	-25.8	(.7)	13.2	(1.2)
Interactions with Firm Char.								
General Training	8.0***	(3.9)	5.2'	(1.6)	4.5	(.7)	9.2***	(2.9)
Specific Training	- 2.2	(.8)	- 7.5	(1.4)	- 4.0	(.5)	2.3	(.6)
Proportion Well Qualified	.6	(.1)	- .5	(.1)	5.5	(.6)	- 1.2	(.3)
Turnover Rate	4.3**	(2.1)	4.4	(1.2)	5.8	(.9)	2.9	(1.0)
Proportion Supervisors Recruited Internally	2.0	(1.1)	4.3	(1.3)	.9	(.2)	3.4	(1.2)
Ln Wage	- 6.5'	(1.6)	- 2.3	(.3)	14.1	(.6)	- 8.2'	(1.5)
Ln Establishment Employment	.1	(.1)	.4	(.5)	-.7	(.6)	- .3	(.3)
Proportion Less Than 25-Yr-old	1.1	(.3)	- 1.1	(.1)	2.5	(.3)	2.6	(.4)
No Probationary Period	- 1.8	(.8)	- 1.8	(.6)	- 6.5	(1.1)	.2	(.1)
Probationary Period GT 3M	1.7	(.8)	- .9	(.3)	-24.1	(1.4)	.6	(.2)
Interactions with Applicant Char.								
No. Quits in Job History	2.2'	(1.5)	7.6**	(2.5)	- 1.5	(.3)	.7	(.4)
Associate Degree	- 7.1***	(3.6)	- 9.5***	(3.0)	2.7	(.5)	- 7.7**	(2.5)
HS Dropout	1.8	(.8)	- 5.3	(1.5)	4.3	(.6)	.5	(.1)
HS GPA	.0	(.0)	- 2.7	(1.3)	7.6*	(1.9)	- 1.5	(.7)
Proportion Relevant Work Experience	2.6	(1.2)	2.0	(.5)	- 6.7	(.8)	3.7	(1.1)
Typing Words/Minute	- .3*	(1.7)	- .2	(1.1)	--		--	
No. of Machines	.2	(.6)	--		--		.13	(.3)

' Significant at < .10 level on a one tail-test.
* Significant at < .10 level on a two tail-test.
** Significant at < .05 level on a two tail-test.
*** Significant at < .01 level on a two tail-test.

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applicant seemed to be poorly qualified. Completing a 2-year program and getting an associate degree in a relevant field raised a job seeker's rating by about 25 points if the person was not a TJTC eligible, but raised the rating by only about 18 points if the job seeker was a TJTC eligible. For clerical and machine trade jobs, TJTC helped the applicants with lesser amounts of schooling more than it helped the applicants with associate degrees. In fact, the regressions predicted that when a person with an associate degree put TJTC eligibility on their job application, it lowered their chances of being hired. Being a fast typist was an important plus for all applicants for clerical jobs but it was less important for those who were TJTC-eligible. Having one or two quits on one's employment history was a negative for all job applicants, but was less of a negative for TJTC eligibles. The pattern of the coefficients that achieve statistical significance (except for the anomalous positive coefficient on high school GPA in the retail subsample) supports the hypotheses. TJTC eligibility seemed to help compensate for characteristics that were generally viewed as negative (e.g., low typing speed or a high propensity to quit), but did not help and may have hurt those who looked highly qualified. This may be construed as good news, for it means that TJTC most helps those who need help the most.

Most of the interactions between TJTC eligibility and characteristics of the firm were not statistically significant. The results did confirm the central hypothesis that, when the job description is held constant, the firms that viewed TJTC eligibility in the most favorable light were the firms that did the greatest amount of on-the-job training in skills that are useful at other firms. A firm that reported investing 50 percent of the employees' time in general OJT rated a TJTC applicant four points higher than a firm that reported not investing in general OJT. The effect is statistically significant at the .001 level in the full sample, at the .10 level (on a one-tail test) in the clerical sample, and at the .01 level in the machine trades sample.

It was also hypothesized (see chapter 3) that firms that invested a great deal in specific training might find the higher quit rates of TJTC eligibles an important negative and would therefore assign lower hiring priority ratings to TJTC eligibles. In three of the four regressions, the coefficients on

specific training were negative, as hypothesized, but they were not statistically significant. High turnover rates also seemed to be associated with viewing TJTC eligibles more favorably. The coefficient was positive in all four models and statistically significant in the full sample. Lower wage rates also seemed to be associated with viewing TJTC eligibles more favorably. The coefficient on the logarithm of the wage is significantly (at the .1 level on an one-tail test), negative for the full sample, and negative for the machine trades sample.

The pattern that seems to emerge from these results is that TJTC had a more positive impact at firms that were already hiring the least qualified workers and giving them the additional training they required. These firms were used to dealing with the types of workers they perceived TJTC eligibles to be, and so being a TJTC eligible carried little or no stigma. Holding the job description constant, TJTC's impact was less favorable at firms that paid high wages, had low turnover rates, offered little general training (i.e., expected new hires to already be trained), and concentrated their training on specific rather than general skills.

CHAPTER 5

HOW DO EMPLOYERS FIND TJTC ELIGIBLES?

Probably the second most important barrier to participation is the difficulty in identifying and/or recruiting eligibles who are qualified for the firms' jobs. (The most important barrier is the belief that eligibles do not make good employees). Data on how employers identified which job applicants and/or new hires were eligible for TJTC are presented in tables 5.1 and 5.2.

Table 5.1 presents unweighted sample data on the primary method of identifying eligibles that was used by participating firms. Hiring selections were more likely to be influenced if the hiring decision maker had learned (or at least had developed opinions about) which job applicants were eligible for TJTC. Consequently, table 5.1 distinguishes how information about eligibility was obtained when eligibility was known prior to making the hiring decision, from how it was obtained when the eligibility of an employee was learned long after hiring. Table 5.2 weights the sample data by the number of TJTC hires known to be eligible at the time they were hired.

5.1 Referrals

Referrals by the employment service, other agencies, and high schools were the primary or sole source of knowledge about TJTC eligibility for 50 percent of the companies that hired only one TJTC eligible between January 1980 and September 1981, for 52 percent of the companies that knowingly (i,e., learned of job applicant's eligibility prior to hiring) hired more than one TJTC eligible in 1980-81, and for 56 percent of all companies hiring TJTC eligibles after retroactivity was abolished in September 1981. Prior to September 1981, referrals accounted for 39 percent of all the TJTC hires who were known to be eligible prior to the hiring decision. After September 1981, referrals accounted for 49 percent of all TJTC hires.

The employment service was given as the source of eligibility information by 17.6 percent of the employers who had knowingly hired eligibles prior to September 1981 and by 19.9 percent of users after September 1981. The ERTA amendments eliminating retroactivity seemed to have increased the number of

TABLE 5.1

PRIMARY METHOD OF FINDING OUT ABOUT TJTC ELIGIBILITY

	Hired Only One TJTC Eligible in 1980-81	Multiple TJTC Eligibles Hired in 80/81		Hired TJTC Eligibles after 9/81
		Learned after Hiring	Learned before Hiring	
Referral Agency Told Company:				
Employment service	14.4	11.1	17.6	19.9
High school	8.2	7.9	15.6	15.9
Welfare office	3.1	.8	0	.6
CETA/JTPA	7.2	2.4	2.5	3.3
Other specified	3.1	4.8	1.5	2.0
Agency not specified	14.4	8.7	15.1	14.6
Subtotal	50.4	35.7	52.3	56.3
Employment Service Came and Checked Workers	0	4.0	1.5	.7
Applicant Told Company	27.8	24.6	25.1	19.9
Respondent or Staff Determined Eligibility	16.4	24.6	11.6	14.6
Sent Applicant to Employment Service to Determine Eligibility	4.1	5.6	6.5	7.3
A Company We Hired Determined Eligibility	2.1	5.6	3.0	1.3
Total	100%	100%	100%	100%
Number of Specific Answers	97	126	199	151
Other (not specified)	2	11	8	6
Don't Know	4	13	15	3
Not Answered	13	15	9	1

The table is based on an unweighted count of employer reports of the primary method by which they learned of the TJTC eligibility of particular new employees. The data are not weighted by the firm's probability of selection.

TABLE 5.2

HOW TJTC ELIGIBLES ARE FOUND

	TJTC Hires Known to Be Eligible When Hired	
	Prior to September 1981	After September 1981
Referral Agency Told Company		
Employment service	18.0	28.5
High schools	10.3	8.3
Other specified	1.3	4.7
Agency not specified	9.6	7.9
Subtotal	39.2	49.4
Employment Service Came and Checked Workers	.7	1.6
Applicant Told Company	36.0	24.4
Respondent or Staff Determined Eligibility	11.7	14.7
Sent Applicant to Employment Service to Determine Eligibility	11.9	8.3
A Company We Hired Determined Eligibility	.6	1.6
Total	100%	100%
Number of TJTC Hires Known to Be Eligible When Hired	1801	1045
Number of Known TJTC Eligibles from Unknown Source	161	28

The table weights the responses about the most, the second-most, and third-most important mechanisms of learning of a worker's eligibility by the number of TJTC hires. The data are not weighted by the firm's probability of selection.

employment service referrals of TJTC eligibles. Employment service referrals accounted for only 18 percent of the knowing hires of TJTC eligibles prior to September 1981, but accounted for 29 percent in the months after retroactivity was abolished.

About 40 percent of all TJTC certifications in calendar years 1980 and 1981 were high school co-op students, so it is not surprising that high schools were described as the primary referral source by 15.6 percent of those who knowingly hired more than one eligible and by 15.9 percent of those hiring TJTC eligibles after September 1981.[1] High school referrals (probably of co-op students) accounted for 10 percent of the knowing TJTC hires prior to September 1981, and for 8 percent after that date. Welfare offices were not reported to be an important referral source, and CETA/Job Training Partnership Act (JTPA) agencies were important referral sources only for small users.

One of the most interesting findings in table 5.1 is the large number of companies reporting that a referring agency told them of a new hire's eligibility for TJTC after they had selected the employee. The question was asked 3 years after the introduction of the program, so it is unlikely that these responses refer to eligibles hired prior to original passage of the TJTC legislation in the summer of 1979. In some cases, the delay in informing employers may be due to the placement official or the high school co-op teacher not learning about TJTC until after a placement had been arranged. More probably, it reflects conscious decisions to withhold information about the TJTC eligibility of referrals until after the hiring decisions were made. There is anecdotal evidence that the staff of some labor market intermediaries were selective about informing employers of their clients' eligibility. The explanations given for such selectivity are that (1) mentioning the tax credit might have hurt the client's chances to get the job, (2) the particular firm would hire clients even if it did not receive a tax credit, and that (3) TJTC eligibles were not the intermediaries' only clients and it would not have been fair to the non-TJTC eligibles to mention the subsidy.

Some State Employment Security Agencies (SESAs) attempted to market TJTC by offering to send a staff memmber to the firm to screen and certify previously hired workers for TJTC eligiibility. Georgia is reported to have used

this marketing strategy in 1980 and 1981. Important as it may have been in Georgia, this approach was clearly not important in the areas of the country sampled by the NCRVE survey (Georgia was not represented).

5.2 The Job Seeker

The targeted employment subsidies that preceded TJTC--WIN, NAB-JOBS, and CETA-OJT--all necessitated agency referrals of eligible job applicants. With TJTC there are two other ways of bringing subsidy, employer, and job seeker together. Job seekers may inform employers of their eligibility. This may occur either at the job seeker's initiative (e.g., by placing the information in the comments section of the job application or by bringing the matter up during an initial phone call or the interview) or in response to a direct question on the job application or in the interview.[2]

Twenty-five percent of the firms reporting multiple TJTC hires in 1980-81 and 20 percent of those hiring TJTC eligibles after September 1981 reported that their primary method of learning of a new hire's eligibility was being told by the applicant. Individuals who told the employer that they were TJTC eligible accounted for 36 percent of the hiring of known eligibles prior to September 1981, but only 24 percent after that date.

Only a small proportion of all unemployed eligibles seemed to volunteer information about their TJTC eligibility. The primary reason is that most eligible workers were unaware of TJTC's existence and/or their eligibility for a voucher. In most states employment service offices do not routinely inform the eligibles who do come for assistance that they are eligible (Macro Systems 1985). The other barrier to this mechanism becoming important was the reluctance of many job applicants to advertise their TJTC eligibility for fear they would be stigmatized. This reluctance may be justified. As mentioned in chapter 4, two experiments in which TJTC-eligible welfare recipients were trained to inform employers of their eligibility for a tax credit found that such training caused a statistically significant reduction in placement rates (Burtless and Cheston 1981; Moran et al. 1982).

5.3 The Employer: Doing It Yourself

A third way in which eligibles can be identified is for firms--the organizations that most directly benefit from the tax credit--to do it themselves. This scenario envisions employers screening their job applications for eligible individuals and then sending applicants who seem to be eligible down to the employment service for vouchering and certification before or after the applicants are hired. Presumably, anticipating that one may be eligible for subsidy and another is not will increase the probability that the first person is offered the job.

Only 11.7 percent of the TJTC hires who were known to be eligible prior to September 1981 and 14.7 percent of TJTC hires after that date were identified as probably eligible by the firm's own staff. Having another company screen applicants for eligibility was reported as a primary mechanism by only 3 percent of the firms that knowingly hired more than one TJTC eligible prior to September 1981, and accounted for an even smaller share of the TJTC hires. Only 1.3 percent of the firms hiring TJTC eligibles after September 1981 used another firm to identify eligibles. There was a tendency in the period before September 1981 for those firms that identified TJTC eligiblity on their own or with the help of an outside firm to make their eligibility determinations after the hiring decision.

The use of family income and participation in welfare programs as targeting criteria makes it difficult for employers to know who is eligible and thus prevents many employers from taking the tax credit into account when hiring. Only 7 percent of the firms reported that sending job applicants to the employment service prior to hiring was the primary mechanism of learning about eligibility. Only 8 percent of the TJTC hires after September 1981 were identified in this way. Probably the reason this strategy was not popular was that it delayed the hiring process and risked losing the worker altogether. Identification of eligibles by the employer (or an agent) was not as important a mechanism of identifying and certifying TJTC-eligible workers as might have been anticipated.

NOTES

1. Referrals by high schools did not diminish after September 1981 because high school co-op students who were not low-income remained eligible for TJTC until December 31, 1981. Many such referrals were made in the fall of 1981.

2. Data on the source of eligibility information was obtained by coding an open-ended question. Interviewers were not asked to probe these answers, so we do not know whether the information about eligibility was volunteered by the applicant or whether it was a response to a direct question. It is also possible that the job applicants who volunteered that they were eligible were referred to the firm and that they were told that the firm requested TJTC eligibles. Consequently, the 25 and 20 percent figures are upper-boundary estimates of the incidence of applicants volunteering that they were eligible.

CHAPTER 6

IMPACT OF TJTC ON EMPLOYMENT AT SUBSIDIZED FIRMS

6.1 Introduction

The purpose of this chapter is to determine the impact, if any, that TJTC has had upon the total employment of participating firms. The TJTC program has two primary goals: (1) to increase employment of the disadvantaged workers in the targeted categories and (2) to increase the total number of jobs in the economy. An ideal program would function such that (1) and (2) exactly coincide; that is, new jobs are created for disadvantaged workers without causing displacement of non targeted members of the labor force. In practice, a large number of participating firms may either create targeted jobs only at the expense of nontargeted employment, or may increase neither targeted nor nontargeted employment.

The analysis of participation in TJTC reported in previous chapters and undertaken elsewhere (Bishop and Montgomery 1984; Montgomery 1982;) suggest that low take-up rates can be raised by more vigorous promotional efforts by local program administrators. But would such efforts be worthwhile? Vigorous promotional campaigns are costly and should be conducted only if TJTC is cost-effective (i.e., only if a reasonable proportion of the participating firms are being induced to increase their hiring of targeted workers and this hiring does not displace other similarly disadvantaged workers from their jobs).

When a firm applies for a targeted subsidy, it may be (1) applying for a credit for an employee who was already a part of its labor force, or would have been selected even if there had been no subsidy; (2) hiring a targeted worker for a job that would have otherwise been filled by a non targeted worker; or (3) hiring a targeted worker for a job that would not have existed in the absence of the subsidy. When the employment subsidy influences who is hired but not how many are hired, there is within-firm displacement of other workers. Because the workers displaced will probably be unskilled and may have almost as much difficulty finding jobs as targeted workers, such an outcome is not as positive as the hiring of a targeted worker for a newly created job. This chapter examines the extent and nature of within-firm displacement. The specific questions addressed are as follows:

- What impacts do the TJTC and JTPA-OJT programs have on the level of employment at participating firms? How much displacement?

- What impacts do these programs have on the share of employees who are under the age of 25 at participating firms? Who is displaced?

A subsidy program may influence employment in at least two ways. First, subsidies may lower by nearly 50 percent the marginal costs of certain types of labor (i.e., tax-credit-eligible workers). This creates an incentive to expand employment. The incentive is greatest when the firm consciously tries to increase the share of the new hires who are eligible for subsidy, when the wages of these types of workers are a major share of total costs, and when the firm is able to substitute these workers easily for capital or other purchased inputs.

A second effect of targeted employment subsidies on employment is through their effect on the working capital available to firms whose expansion is constrained by lack of access to capital markets.[1] When business is good, many (small) firms claim their expansion is constrained by lack of working capital. Any tax cut that benefits such firms will stimulate employment at those firms. Such increases in employment may, however, be offset by reductions in employment at other firms that compete with the firm that receives the tax credit or that must pay additional taxes.

This chapter examines the effects of TJTC upon a firm's employment level by regressing the growth in the firm's employment in a given year on the growth in TJTC usage in that year and a vector of other firm and regional characteristics. The sign and statistical significance of the TJTC variables will be used to judge whether the subsidy program induced participating firms to expand employment.

This chapter is organized into five sections. Section 6.2 discusses the specification of the models examining the impact of TJTC on employment growth. Section 6.3 presents the empirical results from the growth regressions. Sections 6.4 provides a discussion of the specification of the models predicting the proportion of workers who are young, and the results of the estimation results. Section 6.5 summarizes the findings and draws conclusions.

6.2 Specifying the Employment Change Equation

Assume that the growth of the jth firm's labor force over the relevant period, g_j, contains an exogenous component, g_{Aj}, and a component induced by the subsidy, g_{Ij}. Therefore--

$$g_j = g_{Aj} + g_{Ij}$$

The exogenous component g_A may be greater than or less than zero. The null hypothesis to be tested here is that the subsidy-induced portion, g_I, is zero. It is impossible to observe either component directly. Given the types of variables available to specify the growth equation, assume that g_A was a function of a vector of firm characteristics, X, and characteristics of its location, R, as follows

$$g_{Ai} = (X_i, R_i)$$

The vector X of characteristics contains the following variables:

- Whether the firm is unionized. Given the national trend in industry employment, non union firms are expected to grow more rapidly than unionized firms.
- Size of the firm. Given the size of the local labor market (see below), a very large firm is likely to face a less elastic labor supply curve.
- A group of industry dummies. Since the measure of employment change is for 6 months only, and the national trend variable is for the entire year, the seasonality of the industry will influence the dependent variable. A set of dummies for seasonal industries was included to control for this. Other industry dummies were included to control for differences that may systematically emerge for product classes: manufacturing goods, services, communications, wholesale and retail trade, etc.

A vector of characteristics of the firm's location, R, includes the following variables:

- Size of the local labor market. The larger the absolute size of the local applicant pool, the more elastic the labor supply facing the firm should be.
- A set of locational dummies.

Theory suggests that the level of a subsidy influences the equilibrium level of a firm's employment. This implies that the dependent variable--change in employment at a firm--should respond to changes in the number of subsidized workers available to and hired by the firm.[2] The hypothesis that the subsidy-induced component, g_I, was zero was tested by evaluating the impact of changes in the subsidy usage on employment growth.

How does the hiring of subsidized employees influence the composition and level of a firm's employment? The answer to this question depends on three things: the proportion of subsidy eligibles hired who are retained, the extent to which subsidized employees displace unsubsidized employees, and who is displaced. Figure 6-1 illustrates the relationship for the 'j'th firm.

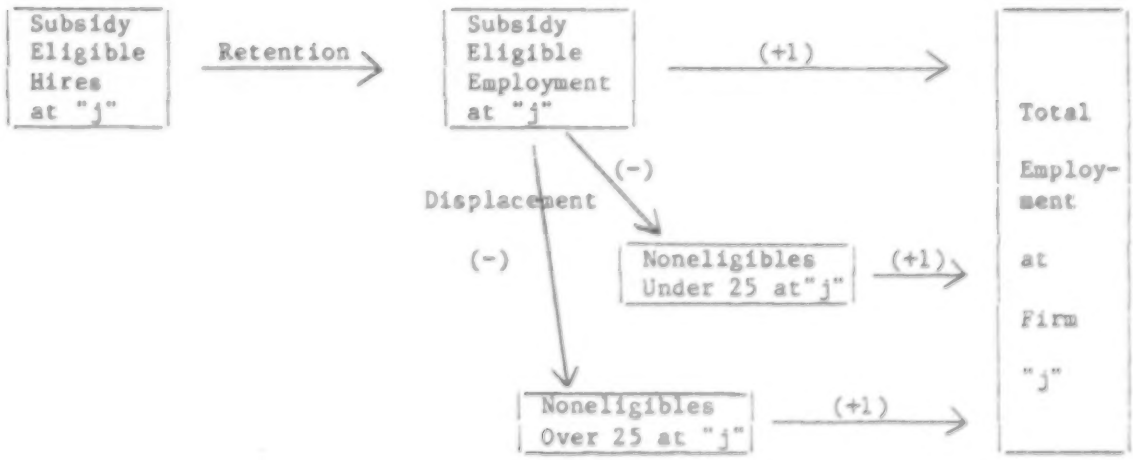

Figure 6-1. Relationship for the jth firm

Not all of the subsidy eligibles hired during a year have been retained at the end of that year, so $\frac{d(\text{Subsidized Empl})}{d(\text{Subsidized Hires})} = \frac{dSE}{dSH} = r_s < 1$. Some of the subsidized employees will displace workers not eligible for subsidy, as follows:

(1) $\quad \frac{dE}{dSH} = (1 - \frac{dNE}{dSE})r_s$

6.3 Econometric Evidence for 1981 and 82

The 1982 NCRVE employer survey is a rich source of data on the use of targeted employment subsidies. It provides data on the use of tax credits (TJTC and WIN) for 3 different time periods: calendar 1980, the first 9 months of 1981, and the period from October 1981 until the date of the interview. Data on the use of CETA or JTPA on-the-job training contracts are available for calendar 1980 and for the period from January 1981 to the interview date. For the tax credit programs, we can identify how many of the TJTC eligibles were certified, how many were known to be eligible when hired, how many were referred to the employer by a school (and therefore were probably co-op students), how many were referred by the employment service, and how many were identified by the firm itself. Data on employment at the company are available for the following dates: July 1980, December 1980, July 1981, December 1981 and the date of the interview.

It is important that the interval over which the hiring of subsidized employees is measured corresponds as closely as possible with the interval over which growth is defined. Consequently, the analysis of employment growth examines time periods that begin in December 1980. When employment growth between December 1980 and December 1981 is analyzed, the subsidy variable is the TJTC and WIN certifications obtained during the first 9 months of 1981. When employment growth between December 1980 and the interview date is analyzed, the subsidy variable is based on certifications obtained during that period.

The level of subsidy use is assumed to influence the level of employment. Consequently, changes in employment will be a function of changes in the use of the subsidy program. Three different specifications are employed, as follows:

$$(2) \quad \frac{E81-E80}{E} = a_1\frac{TJTC81}{E} + a_2\frac{TJTC80}{E} + a_3\frac{JTPA}{E} + a_4\frac{SUB79}{E79} + a_5 \ln E79 + \underline{aX} + u$$

$$(3) \quad \frac{E81-E80}{E} = b_1\frac{TJTC81}{NEWH81} + b_2\frac{TJTC80}{E} + b_3\frac{JTPA}{E} + b_4\frac{SUB79}{E79} + b_5 \ln E79 + \underline{bX} + v$$

$$(4) \quad \frac{E81-E80}{E} = c_1\frac{TJTC81}{E} + c_2\frac{TJTC80}{E} + c_3\frac{JTPA}{E} + c_4\frac{SUB79}{E79} + c_5 \ln E79 + \underline{cX} + w$$

where

E80, E81 = employment in December 1980 and December 1981, respectively;

TJTC80, TJTC81 = the number of TJTC certifications in 1980 and in the first 9 months of 1981;

JTPA = the number of CETA or JTPA-OJT-subsidized hires between January 1980 and the interview date;

SUB79 = the sum of TJTC, WIN and CETA-OJT subsidized hires in 1979;

E = the average level of employment over the time period for which growth is defined;

E79 = the average level of employment in 1979 measured in the first wave;

NEWH81 = the number of new hires in calendar 1981; and

X = a vector of characteristics of the company.

The first specification assumes that the proportionate rate of growth is a function of present and lagged ratios of subsidized hires to employment. If subsidy use causes the firm to increase employment, we would expect a_1, b_1, c_1, and a_3, b_3, c_3 to be positive and a_2, b_2, c_2, a_4, b_4 and c_4 to be negative. Ordinary least squares (OLS) estimates of equation (2) will be unbiased if whether the firm participates and the number of subsidized hires obtained by companies that participate are exogenously determined by (a) knowledge of the program, (b) beliefs about the productivity of eligibles, and (c) the referral policies of the agencies that place disadvantaged workers, and are not influenced by the actual growth experienced by the company.

The number of subsidized hires in 1979 and 1980 are predetermined, and the model includes a control for employment at the beginning of the period over which growth is defined, so these variables are not a source of simultaneity bias. The problem, if there is one, comes from the inclusion of $\frac{TJTC81}{E}$ and $\frac{JTPA}{E}$ in the model. If greater employment growth during 1981 tends to increase TJTC81/E and JTPA/E, the coefficients a_1 and a_3 may be biased in a positive direction.[3]

6.3 Econometric Evidence for 1981 and 82

The 1982 NCRVE employer survey is a rich source of data on the use of targeted employment subsidies. It provides data on the use of tax credits (TJTC and WIN) for 3 different time periods: calendar 1980, the first 9 months of 1981, and the period from October 1981 until the date of the interview. Data on the use of CETA or JTPA on-the-job training contracts are available for calendar 1980 and for the period from January 1981 to the interview date. For the tax credit programs, we can identify how many of the TJTC eligibles were certified, how many were known to be eligible when hired, how many were referred to the employer by a school (and therefore were probably co-op students), how many were referred by the employment service, and how many were identified by the firm itself. Data on employment at the company are available for the following dates: July 1980, December 1980, July 1981, December 1981 and the date of the interview.

It is important that the interval over which the hiring of subsidized employees is measured corresponds as closely as possible with the interval over which growth is defined. Consequently, the analysis of employment growth examines time periods that begin in December 1980. When employment growth between December 1980 and December 1981 is analyzed, the subsidy variable is the TJTC and WIN certifications obtained during the first 9 months of 1981. When employment growth between December 1980 and the interview date is analyzed, the subsidy variable is based on certifications obtained during that period.

The level of subsidy use is assumed to influence the level of employment. Consequently, changes in employment will be a function of changes in the use of the subsidy program. Three different specifications are employed, as follows:

$$(2) \quad \frac{E81-E80}{E} = a_1\frac{TJTC81}{E} + a_2\frac{TJTC80}{E} + a_3\frac{JTPA}{E} + a_4\frac{SUB79}{E79} + a_5 \ln E79 + \underline{aX} + u$$

$$(3) \quad \frac{E81-E80}{E} = b_1\frac{TJTC81}{NEWH81} + b_2\frac{TJTC80}{E} + b_3\frac{JTPA}{E} + b_4\frac{SUB79}{E79} + b_5 \ln E79 + \underline{bX} + v$$

$$(4) \quad \frac{E81-E80}{E} = c_1\frac{TJTC81}{E} + c_2\frac{TJTC80}{E} + c_3\frac{JTPA}{E} + c_4\frac{SUB79}{E79} + c_5 \ln E79 + \underline{cX} + w$$

where

E80, E81 = employment in December 1980 and December 1981, respectively;

TJTC80, TJTC81 = the number of TJTC certifications in 1980 and in the first 9 months of 1981;

JTPA = the number of CETA or JTPA-OJT-subsidized hires between January 1980 and the interview date;

SUB79 = the sum of TJTC, WIN and CETA-OJT subsidized hires in 1979;

E = the average level of employment over the time period for which growth is defined;

E79 = the average level of employment in 1979 measured in the first wave;

NEWH81 = the number of new hires in calendar 1981; and

X = a vector of characteristics of the company.

The first specification assumes that the proportionate rate of growth is a function of present and lagged ratios of subsidized hires to employment. If subsidy use causes the firm to increase employment, we would expect a_1, b_1, c_1, and a_3, b_3, c_3 to be positive and a_2, b_2, c_2, a_4, b_4 and c_4 to be negative. Ordinary least squares (OLS) estimates of equation (2) will be unbiased if whether the firm participates and the number of subsidized hires obtained by companies that participate are exogenously determined by (a) knowledge of the program, (b) beliefs about the productivity of eligibles, and (c) the referral policies of the agencies that place disadvantaged workers, and are not influenced by the actual growth experienced by the company.

The number of subsidized hires in 1979 and 1980 are predetermined, and the model includes a control for employment at the beginning of the period over which growth is defined, so these variables are not a source of simultaneity bias. The problem, if there is one, comes from the inclusion of $\frac{TJTC81}{E}$ and $\frac{JTPA}{E}$ in the model. If greater employment growth during 1981 tends to increase TJTC81/E and JTPA/E, the coefficients a_1 and a_3 may be biased in a positive direction.[3]

The second specification assumes that rates of growth are a function of the lagged ratios of subsidized hires to employment and of present ratios of subsidized hires to new hires. These models are estimated on the subsample of companies that had at least one new hire in 1981. OLS estimates of equation (3) will be unbiased if the ratio of subsidized hires to new hires is not affected by the rate of growth of employment during the time period. Growth has a direct impact on the number of new hires required, so unless the number of subsidized hires increases proportionately with the total number of new hires without increasing marginal costs of recruiting qualified TJTC eligibles, growth will tend to have a negative effect on TJTC81/NEWH81. This may result in b_1 being biased in a negative direction.

The third specification employs two-stage least squares. Instrumental variable estimates of equation (3) are obtained by regressing growth on predicted rather than actual values of TJTC80/E and JTPA/E. These results are discussed at the end of this section.

All of the models allow subsidy usage in 1980 and 1981 to have a diminishing impact on employment growth as the level of subsidy usage grows. The marginal impact of TJTC and JTPA usage on growth is assumed to be a step function that has a discontinuity at TJTC80/E (or TJTC81/E or JTPA/E) equal to 0.5. In order to minimize colinearity, the TJTC variables are defined as follows.

- TJTC80/E LT.5 = min(.5, TJTC80/E)
- TJTC80/E GT.5 = TJTC80/E - TJTC80/E LT.5
- TJTC81/E LT.5 = min(.5, TJTC81/E)
- TJTC81/E GT.5 = TJTC81/E - TJTC80/E LT.5

It is hypothesized that the coefficients on the upper portion of the splines (the second and fourth variables) will be closer to zero than the coefficients or the lower portion of the splines.

Tables 6-1 and 6-2 report our estimates of the impact of the two subsidy programs on 1981 employment growth. All models include a long list of control variables measured in the first wave of the survey--size of establishment,

TABLE 6.1

IMPACT OF TARGETED EMPLOYMENT SUBSIDIES ON EMPLOYMENT GROWTH
(Share of Employment Specification)

	Employment Growth		
	12/80 - 12/81		12/80 - Interview
Subsidized Hires in 1979/(empl)	-.085** (1.8)	-.091*** (1.9)	-.173*** (2.7)
TJTC Certifications in 1980/(empl)		-.064 (1.1)	-.084 (1.2)
1980 Certif. up to .5	-.250** (1.9)		
1980 Certif. above .5	.022 (.8)		
TJTC Certif. in 1981/(empl) LT.5	.334** (2.0)	.299** (1.8)	.285** (2.1)
TJTC Certif. in 1981/(empl) GT.5	-.055 (.5)	-.057 (.5)	-.038 (.5)
JTPA-OJT Hires in 1980-82/(empl) LT.5	.086 (1.0)	.074 (.9)	.078 (.7)
R-square	.086	.086	.097

* $p < .10$ on a one-tail test.
** $p < .05$ on a one-tail test.
*** $p < .01$ on a one-tail test.

NOTE: The numerator of the 1981 certification/employment variable is TJTC certifications in the first 9 months of 1981 when December-to-December growth is the dependent variable, and is certifications between January 1981 and the interview date when growth during that same period is the dependent variable. The complete set of control variables included in the regression is provided in table 6.6.

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TABLE 6.2

IMPACT OF TARCETED EMPLOYMENT SUBSIDIES ON EMPLOYMENT GROWTH
(Share of New Hires Specification)

	Employment Growth			
	12/80 - 12/81		12/80-Interview	
Subsidized Hires in 1979/(empl)	-.108**	(2.14)	-.172***	(2.51)
TJTC certifications in 1980/(empl))	-.059	(1.17)	-.088*	(1.32)
TJTC certifications in 1981/(new hires 81)	.025	(.50)	.00	(.02)
JTPA-OJT-subsidized Hires in 1980-82/(empl)	.045	(.27)	.01	(.05)
JTPA-OJT up to 0.5/(empl)	-.075	(.32)	.02	(.07)
R-square	.113		.126	

NOTE: The sample is limited to firms that hired at least one new employee during 1981. The numerator of the 1981 certification/new hires variable is TJTC certifications in the first 9 months of 1981 when December-to-December growth is the dependent variable, and is certification between January 1981 and the interview date when growth during that same period is the dependent variable. The complete set of control variables included in the regression is provided in table 6.6

* $p < .10$ on a one-tail test.
** $p < .05$ on a one-tail test.
*** $p < .01$ on a one-tail test.

turnover, percent of the work force under 25, percent unskilled, percent unionized, dummies for industry, 18 dummies for location, and expected rates of employment growth--and a shorter list of firm characteristics obtained from the second wave of the survey--growth rate of unit sales, change in unionization, and the deviation of the firm's wage from an amount predicted by an equation controlling for occupation and employee background characteristics. The definition, means, and standard deviation of the variables included in the model are in a table 3.1.

The results of estimating equation (2) are reported in table 6-1. The results do not seem to depend on which time period is examined. A large, statistically significant positive coefficient is obtained on 1981 TJTC hires up to one-half of employment, and a statistically significant negative coefficient of almost equal magnitude is obtained on the corresponding variable for 1980. The result can be interpreted as support for the hypothesis that employment change responds to change in subsidy use. The coefficients on the upper portion of the spline are much smaller and not significantly different from zero. This implies that once the number of subsidized hires reaches one-half of the firm's employment, further increases in subsidized hiring have no impact on employment growth. Subsidy use in 1979 (not splined) also had a statistically significant negative impact on 1981 employment growth. None of the coefficients on the variables measuring the use of JTPA are statistically significant, and they are all very close to zero.[4] Taken at face value, the coefficients on 1980 and 1981 TJTC variables imply that, as long as TJTC hires did not exceed half of the firm's employment, each 10 TJTC hires by a firm increased its end-of-year employment by about 3. They further imply that employment essentially returns to its previous level by the end of the following year. What do these coefficients imply is the magnitude of displacement? Only about 60 to 75 percent of TJTC hires are probably at the firm at the end of the first year. Remembering equation (1), the implied rate of within firm displacement ranges from 0.5 to 0.6.

The results of estimating equation (2) are reported in table 6-2. Coefficients on the ratio of 1979 subsidized hires to employment and the ratio of 1980 TJTC hires to employment are negative, as before, and are almost as

statistically significant. They imply that greater use of TJTC in year t results in lower growth rates in years t+1 and t+2. When subsidized hiring in 1981 is normalized by new hires rather than by employment, the coefficients drop to zero. These results are quite different from those reported in table 6-1. The differences are no doubt due to the fact that simultaneity bias operates in opposite directions in the two models. When confronted with such results as these, all that can be said is that the true impact of TJTC hires on employment at the end of the year is probably somewhere between 0 and 0.3.

Because dependent variables are proportionate rates of growth, the residual variances of the models are greater for small establishments than for larger establishments. This produces a heteroskedasticity problem that reduces the efficiency of estimates and that biases estimates of standard errors. Statistical models of the log of the residual variance were estimated, weights were constructed for each observation based on the predicted residual variance, and then the models were reestimated. The results as presented in table 6-3 show that the coefficient on the key subsidy variables did not appreciably change.

Two-Stage Least Squares (2SLS) Estimates

Because level of subsidy usage is potentially endogenous, estimates of TJTC's impact on employment growth may be biased. A firm cannot participate unless it has at least one new hire, and increases in the number of new hires raise the probability of encountering, hiring, and certifying a TJTC eligible. The firm's growth rate, in turn, influences the new hire rate. As a result, a circle of causation may exist in which subsidy use increases growth, growth increases new hires and new hires increase subsidy use. Figure 6-2 represents the causal circle just described. To represent the system of 8 simultaneous equations were estimated. The endogenous variables of the system were as follows:

- New hire rate in 1981
- Employment growth Dec. 80 to the interview date
- Employment growth Dec. 80 to the interview (if positive else 0)
- (TJTC subsidized hires Jan. 81 to interview/empl) LT.5
- (TJTC subsidized hires Jan. 81 to interview/empl) GT.5

- JTPA hires Jan. 79 to interview/empl
- (JTPA hires Jan. 79 to interview/empl) LT.5

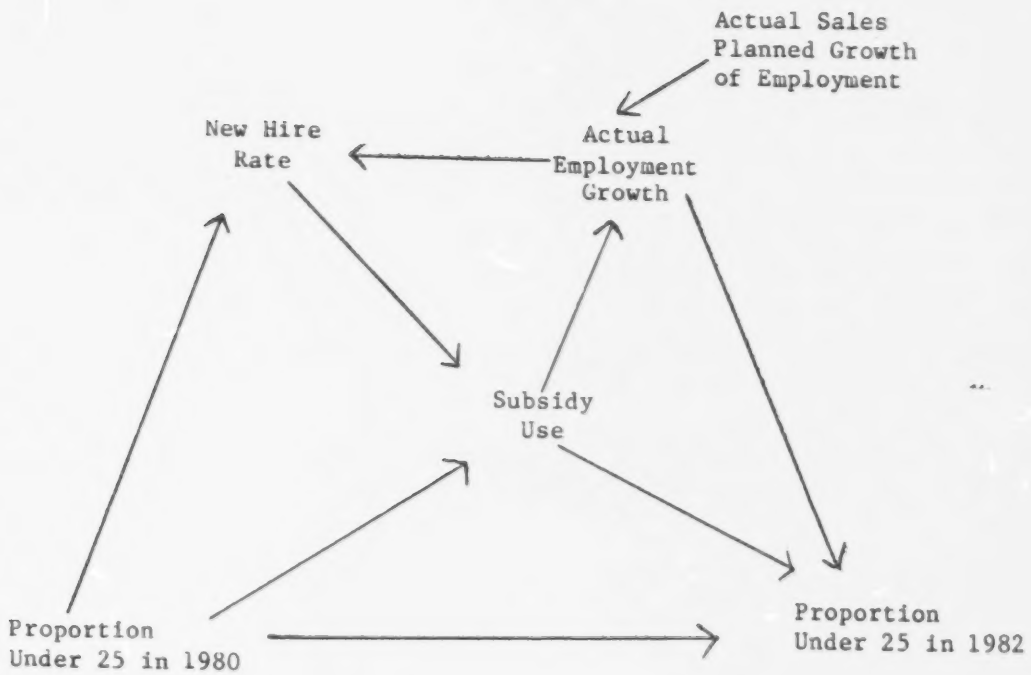

Figure 6-2. Representation of the causal circle

TABLE 6.3

IMPACT OF TARGETED EMPLOYMENT SUBSIDIES ON EMPLOYMENT GROWTH

(Weighted Models)

	12/80 - 12/81						12/80 - Interview					
	Size Only		Modified		Full		Size Only		Modified		Full	
Share of Employment Models												
Sub. Hires 1979/(empl)							-.175***	(2.7)	-.131**	(2.0)	-.135**	(2.1)
TJTC Certified 1980/(empl)							-.066	(.9)	-.074	(.8)	-.110	(1.2)
TJTC Certified 1980/(empl) LT.5							.251**	(1.9)	.242**	(1.8)	.238**	(1.8)
TJTC Certified 1980/(empl) GT.5							-.031	(.4)	-.022	(.5)	-.016	(.3)
JTPA-OJT/(empl) LT.5							.071	(.6)	.037	(.3)	.068	(.6)
R-square							.095		.095		.083	
Wts. Coefficient of Variation							.11		.27		.29	
Share of New Hires Models												
Sub. Hires 1979/(empl)	-.088*	(1.6)	-.136***	(3.6)	-.120***	(2.9)	-.160**	(2.2)	-.187***	(3.1)	-.172	(2.7)
TJTC Certified 1980/(empl)	-.043	(1.0)	-.080*	(1.4)	-.083*	(1.4)	-.076	(1.2)	-.107*	(1.4)	-.129	(1.6)
TJTC Certified 1981/(new hire)	.002	(.0)	.047	(.9)	.034	(.6)	-.004	(.1)	-.008	(.2)	-.006	(.1)
JTPA-OJT/(empl)	.075	(.5)	.099	(.8)	.071	(.5)	.060	(.3)	.120	(.8)	.081	(.5)
JTPA-OJT/(empl) LT.5	-.048	(.2)	-.107	(.6)	-.083	(.4)	-.021	(.1)	-.134	(.5)	-.074	(.3)
R-square	.116		.102		.100		.113		.106		.113	
Wts. Coefficient of Variation	.21		.34		.37		.20		.27		.30	

* p < .10 on a one-tail test.
** p < .05 on a one-tail test.
*** p < .01 on a one-tail test.

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The quality of the 2SLS estimates of a structural model depends critically on the instruments that are available. Estimates of the impact of subsidy programs on employment growth depend on having exogenous predictors of subsidy usage that are not influenced by turnover and growth and that also do not have direct impacts on turnover and growth. The variables that serve this function are dummy variables for previous use of subsidy programs, government or employer organization initiated contacts about TJTC or CETA/JTPA and offers of TJTC or JTPA referrals, previous use of the employment service, membership in a local business organization, existence of a personnel department in the firm, the perceived amount of paperwork required to obtain an OJT contract, and a variable for negative attitudes towards government and interactions between government initiated contacts, as well as and the following characteristics of the employer establishment size, firm size, skill requirements, probationary period, percent under age 25 in 1980, previous use of subsidies, and membership in a business organization.

The results of the 2SLS estimates of equation (4) are presented in table 6.4. Coefficients on 1981 subsidy use (up to half of employment)are positive and larger in magnitude but no longer statistically significant. Coefficients on 1981 subsidy use (above half of employment) are now negative, large in magnitude, and in one case statistically significant. The coefficients are also positive for JTPA use below half of employment, negative for use above half of employment and are also not significantly different from zero.

A great deal of effort went into developing and defining instruments for the 2SLS models. These efforts have clearly failed to produce believable estimates of the structural impact of targeted subsidies on employment growth.[5] Despite the probable biases, the OLS estimates of equation (2) and equation (3) probably provide better estimates of the impact of subsidy programs than the 2SLS results. This implies that displacement rates lie somewhere between 0.5 to 1.0.

6.4 Econometric Evidence on the Displacement of Other Young Workers

Since most subsidized workers are under the age of 25, and low- and high-income youth are probably good substitutes for each other, young workers might be more likely to be displaced by TJTC-subsidized hires than older workers.

TABLE 6.4

TWO-STAGE LEAST SQUARES MODELS OF
THE IMPACT OF TARGETED EMPLOYMENT SUBSIDIES

	Empl. Growth 12/80 - 12/81		Empl. Growth 12/80 - 4/82		Percent under Age 25	
Subsidized Hires in 1979/(empl)	-.134**	(1.9)	-.260***	(2.6)	.034	(.7)
TJTC Certif. in 1980/(empl)	-.013	(.3)	.00	(0.0)		
Pred. (TJTC Certif. in 1981/(empl) LT.5	.894	(1.0)	.908	(1.1)	.044	(.1)
Pred. (TJTC Certif. in 1981/(empl) GT.5	-.615	(1.0)	-.770**	(1.9)	-.038	(.2)
Pred. JTPA-OJT/(empl)	-.390	(.9)	-.976	(1.0)	.191	(.7)
Pred. JTPA-OJT/(empl) LT.5	.758	(1.1)	1.14	(1.2)	-.557	(1.32)
Pred./employment growth		--		--	.135	(2.5)
Pred./empl. growth > zero		--		--	.091	(1.3)
R-square	.086		.09,		.661	

* p < .10 on a one-tail test.
** p < .05 on a one-tail test.
*** p < .01 on a one-tail test.

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TABLE 6.5

IMPACT OF TARGETED EMPLOYMENT SUBSIDIES
ON THE SHARE OF THE WORK FORCE UNDER AGE 25

	Level Model		Change Model	
Knowledgeable TJTC Hires 1980-82/(empl)				
LT.5	.138***	(2.3)	.094***	(2.7
GT.5	.009	(.2)	-.003	(.1)
Subsidized Hiring 1979/(empl)				
LT.5	-.065*	(1.6)	-.094***	(2.7)
GT.5	.016	(.3)	+.003	(.1)
JTPA Hiring 1980-82/(empl)	.047	(1.2)	--	--
LT.5	-.080	(1.0)	--	--
Employment Growth 1980-82 (5.3)	.067***	(5.1)	.072***	
Proportion under Age 25 in 1980	.829***	(72.9)	1.000	--
R-square	.716		.051	

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This hypothesis can be tested by examining subsidized hiring's impact on the employment of youth.

The NCRVE employer 1982 survey asked 2 questions about young workers: "Approximately what percentage of your work force is under 25 years of age?" and "Two years ago, approximately what percentage of your work force was under 25 years of age?" These proportions were then modeled as a part of the following recursive system in which employment growth over the time period was taken as predetermined:

$$(5)\quad PrLT25_{82} = d_1 PrLT25_{80} + d_2\frac{KNTJTC}{E} + d_3\frac{JTPA}{E} + d_4\frac{SUB79}{E} + d_5\frac{E82-E80}{E} + d_6 X + w^1$$

where

$PrLT25_{82(80)}$ = the proportion of the establishment's work force that is under 25 years of age at the time of the interview (two years before the interview);

KNTJTC = known TJTC eligibles hired between Jan. 80 and the interview date as a proportion of the average level of employment during that period, and

$\frac{E82-E80}{E}$ = the growth of establishment employment between July 1980 and the interview date divided by the average level of employment in the time period.

The specification has many similarities to the equation (2) model of employment growth. With only a few exceptions, the X vector is the same as that used to estimate equations (2) and (3). The most important difference is the use of knowledgeable TJTC hires rather than total TJTC hires to construct the key subsidy variable. This choice was made because knowing which job candidates are eligible for TJTC when the hiring decision is made seems to be essential if TJTC is to have a major impact on the character of a firm's work force. Such knowledge is also one of the ingredients of being an aggressive user of TJTC.

As before, the hypothesis of diminishing returns is tested in this model by specifying that the marginal impact of subsidy use on the youth share of employment is a step function with a break at subsidized hires/employment = 0.5. The results of estimating equation (5) by ordinary least squares are

presented in the first column of table 6-5 and the in the third column of table 6-6. The second column of table 6-5 presents the results obtained from estimating a corresponding difference model that does not contain the lagged proportion of the work force under 25. In addition, the 2 subsidy level variables are combined into 1 by differencing them (i.e., the following constraints are placed on equation (5): $d_1 = 1$ and $d_2 = -d_3$). A difference model in which no constraints are placed on d_1, d_2, and d_3 is presented in the second column of table 6-6.

The coefficients on knowledgeable TJTC usage up to 0.5 of employment are highly significant. Coefficients on the upper portion of the spline and on JTPA use are small and nonsignificant. The results may be summarized as follows:

- TJTC has larger impacts on the youth share of employment than do JTPA-OJT contracts.
- The impact of TJTC on youth's share of employment diminishes almost to zero when the number of knowledgeable hires of eligibles exceeds half of the firm's employment.

Knowledgeably hiring 10 extra TJTC eligibles when TJTC hires are responsible for less than half of the firm's employment has the following effects on youth employment:

- If the company's employment is constant, the shift of the youth share creates 1.38 additional jobs for youth.
- Any growth of total employment induced by TJTC has additional impacts on the number of jobs available to youth. For example, assume that 10 TJTC hires raises total employment by 3. Because 27 percent of all employees in the sample firms are young, the expansion of the firm therefore creates another 0.81 jobs for youth.
- An additional effect of overall growth is that it tends to raise the share of all employees who are young. An increase in TJTC/E by .10 raises growth by 0.03, which in turn raises $PrLT25_{82}$ by 0.0021, so 10 TJTC hires will create 0.21 youth jobs through this mechanism.
- The total number of additional youth jobs is 2.4, about 80 percent of the assumed increase in total employment.

TABLE 6.6

IMPACT OF TJTC ON EMPLOYMENT GROWTH AND THE SHARE OF THE WORK FORCE UNDER THE AGE OF 25

	Employment Growth	Change in Share under Age 25	Share of Empl. under Age 25 in 1982
Program Variables			
Change in TJTC certifications by firms trying to select TJTC eligibles	.165** (2.26)		
Change in knowledgeable TJTC certi.			
up to 0.5		.092***(2.61)	
above 0.5		-.002 (.06)	
Level knowledgeable TJTC hiring			
up to 0.5			+.138** (2.33)
above 0.5			.009 (.24)
Subsidized empl in 1979			
up to 0.5			-.065 (1.59)
above 0.5			.016 (.28)
Level of JTPA OJT 80-82	-.121 (1.26)	.053 (1.29)	.047 (1.18)
up to 0.5	.244 (1.34)	-.108 (1.31)	-.081 (.98)
Changes in Demand			
Change in employment		.074***(5.35)	.067*** (5.13)
Change in empl. if positive		-.025 (1.16)	-.014 (.91)
Change in sales	+.494***(8.73)	.017 (.64)	.014 (.55)
Change in sales if positive	-.338***(5.16)	.015 (.49)	.018 (.62)
Planned increase in empl. (100's)	.075***(4.94)	-.010 (1.42)	-.010 (1.50)
Planned proportionate increase in empl.	.010 (1.28)	.004 (1.15)	.005 (1.56)
Other Employer Characteristics			
Share under Age 25 in 1979			.829***(73.62)
Log estab. empl. in 1980	-.053***(6.79)	.012***(4.22)	.013*** (4.87)
Log estab empl. in 1980 > 50	.024 (1.42)		
Log ratio firm/estab. empl.	.001 (.10)	.001 (.20)	+.003 (1.17)
New hire rate - 1979	.053 (.80)	-.084 (2.72)	-.052* (1.73)
Quit rate - 1979	-.033 (.36)	-.008 (.19)	.009 (.22)
Induced quit rate 1979	-.239 (1.25)	-.062 (.70)	-.094 (1.09)
Layoff on ability rate - 1979	-.062***(3.30)	.012 (.13)	-.013 (.15)
Dismissal rate - 1979	-.562***(3.12)	.123 (1.47)	.118 (1.45)
Proportion skilled	.018 (1.21)	.004 (.62)	.003 (.44)
Proportion part-time	.060** (2.43)	.010 (.84)	.012 (1.11)
Residual log wage	.030 (1.58)	-.014	-.020** (2.33)
Log cost of machinery	.004 (1.01)	-.003 (1.31)	-.002 (1.25)
Flexibility to fire	.049** (2.51)	-.001 (.12)	-.006 (.64)
Difficult to fire	.046** (1.98)	-.011 (1.06)	-.004 (.38)
Layoff based on seniority	.024 (1.07)	-.007 (.68)	-.012 (1.13)
No probationary period	-.067** (2.03)	-.009 (.62)	-.006 (.39)
Log length probationary period	.024** (2.25)	-.004 (.72)	-.005 (1.14)
Dummies for Industry	x	x	x
Dummies for Location	x	x	x
R-square	.1243	.0533	.7164
Standard Error of Estimate	.312	.145	.140

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- If the true impact of increased subsidy use on employment growth (d_1) is 0.2, and d_5 remains the same, 10 TJTC hires will create a total of 2 additional jobs at the company and youth will get all of them.

- If the true $a_1 = 0.1$ and d_1 remains the same, 10 TJTC hires raise youth employment at the company by 1.71 but total employment by only 100 so the employment of non youth at the company will decline.

- If the 10 TJTC eligibles the firm certified were not known to be eligible at the time of hiring, there are only indirect impacts on the numbers of youth employed at the company. If $a_1 = .3$, 10 TJTC certifications increase youth employment by 1. If $a_1 = .2$, 10 TJTC certifications increase youth employment by .67.

6.5 Summary

What do these results tell us about the size and composition of within-firm displacement? Displacement rates are related to the empirically estimated impacts of subsidized hiring on the employment of youth by the following implicit function:

$$(6) \quad \frac{d(\text{Empl Youth})}{d(\text{Sub Hires})} = \frac{dEY}{dSH} = \left(\frac{dSEY}{dSE} - \frac{dNEY}{dSE}\right) r_s$$

where

$\frac{dSEY}{dSE}$ = the proportion of subsidy eligibles at the comany who are young. the share of all TJTC hires who are young is 0.75;

$\frac{dNEY}{dSE}$ = the rate of displacement of noneligible youth;

r_s = the proportion of subsidized hires during a period who are still retained by the company at the end of the period (probably between 0.6 and 0.75).

We now have estimates for 3 of the 4 terms in equation (6). Assuming that 75 percent of TJTC hires are still at the company at the end of the year ($r_s = 0.75$) and taking account of impacts on the youth share that operate through the growth response, all we need to do is solve

$0.24 = (0.75 - \frac{dNEY}{dSE})\ (0.75)$ for $\frac{dNEY}{dSE}$. The resulting estimates of displacement are $\frac{dNEY}{dSE} = 0.43$ and $\frac{dNE}{dSE} = 0.6$ (assuming $a_1 = 0.3$)

This implies that for every 10 TJTC-subsidized employees at a company who are known to be eligible when hired, there will be the following:

- 4 extra jobs at the company
- 6 fewer unsubsidized employees at the company (most of the not-hired unsubsidized employees are probably not in TJTC target groups)
- 4.3 fewer unsubsidized youth at the company
- 1.7 fewer unsubsidized adults at the company.

If it is true that $a_1 = 0.2$, every 10 TJTC subsidized employees at a company result in the following

- 2.67 extra jobs at the company
- 7.33 fewer unsubsidized employees at the company
- 4.77 fewer unsubsidized youth at the company
- 2.56 fewer unsubsidized adults at the company.

If it is true that a_1 is 0.1, every 10 TJTC subsidized employees at a company there would be:

- 1.33 extra jobs at the company
- 8.67 fewer unsubsidized employees being hired at the company
- 5.22 fewer unsubsidized youth at the company
- 3.45 fewer unsubsidized adults at the company.

These results imply that somewhere between 60 and 90 percent of the jobs filled by TJTC subsidized workers either would have been filled by the TJTC eligible anyway or displaced other workers at the company. This does not necessarily imply, however, that the general equilibrium effects of the program on aggregate employment are small. Targeted employment subsidies do not have to increase the employment of participating firms to increase total employment in the economy. Their primary purpose is to induce employers (1) to hire workers with less skill and experience than they would without the incentive and (2) to provide the more intensive training these new hires require.

Even if the firm does not increase its employment, total employment in all firms may expand if the disadvantaged worker who is hired because of the subsidy would not have been able to get a job without its help (because of the cinimum wage or some other imperfection in the market), and if the less disadvantaged worker who is displaced does find another job because he or she is part of a labor market in which wage rates adjust up and down to equilibrate demand and supply (Johnson 1981). Calculating general equilibrium effects is beyond the scope of this report.

NOTES

1. For example, let us assume that a company with no access to new loan or equity financing and no money in the bank has a business opportunity that requires the immediate hiring of an additional worker at $1,000/month. Revenues of $1,200/month will be generated by this activity but the revenues will not begin for 6 months. The firm will be unable to undertake this potentially profitable activity because it lacks the working capital to finance it. If, however, the firm had hired and certified 2 TJTC-eligible workers the previous year, its tax payments would be $6,000 lower, which is precisely the working capital necessary to respond to this business opportunity. In this case, the additional worker will be hired. How common a phenomenon this type of example is and what the participation rates of these types of firms might be are not known.

2. The employment change was normalized by the average of the employment levels at the endpoints (and converted to a percent). Division by the average level of employment has the advantage of constraining the proportionate change to between plus and minus two, a useful restriction when dealing with small firms.

3. If only TJTC/E is endogenous and it is uncorrelated with X and the other subsidy variables, the coefficient subject to simultaneity bias, a_1, will have the following relationship with the true structural coefficients, $a_1 = a_1^* + \delta$, where δ is from the auxiliary regression: $TJTC/E = \delta_0 + \delta(u)$ (u), and where (u) is the error in the equation (2). Since only 6 or 7 percent of the firms in our sample are participating in TJTC in any given year and only a fraction of their new employees are likely to be subsidy-eligible (even for aggressive users of the program), participation rates would have to be extremely responsive to growth for δ to be greater than 0.07. If TJTC/E were uncorrelated with the other regressors in equation (2), this argument would allow us to place a bound on the simultaneity bias in a_1. However, because TJTC/E is correlated with the other subsidy variables, no such bound can be placed.

4. In models not reported, the upper portion of the JTPA variable was included as a regressor. The coefficient on this variable was negative and larger in magnitude than the coefficient on the lower portion of the spline. This was rejected on *a priori* grounds, so only the lower portion of the spline is included in the specifications reported. The JTPA variable was also broken into a 1980 portion and a 1981-82 portion, but this did not improve its performance significantly.

5. One explanation for the 2SLS-estimated parameters being higher is that the change in percent subsidized variable is measured with error. Instrumental variables techniques reduce bias due to measurement error and this produces larger coefficients.

CHAPTER 7

HOW SHOULD GOVERNMENT PROMOTE TJTC?

The issue to be addressed in this chapter is how the limited resources available to promote the TJTC program should be targeted. Government agencies have used mailings of literature on the program in a number of states. Some of the states that have used this approach are satisfied with the response they have received, others are not. Only a tiny fraction of the firms contacted in this way respond. Many employers report that they almost invariably throw out any literature they receive from government unless it is something to which they are not required to respond to.

7.1 The Impact of Personal Contacts

A more effective (though also more costly) mechanism of TJTC program promotion is personal contacts with employers to explain the program coupled with an offer to screen eligible individuals and refer them to the firm if they are qualified for its job openings. The analysis of the first wave of the employer survey, for instance, found that firms that first learned of the WIN program from a personal contact by a representative of a government agency or local business organization were 84 percent more likely to participate in WIN during 1979, and 63 percent more likely to participate in TJTC than firms that had first heard about it from other sources (Bishop and Montgomery 1984). Having first heard of CETA-OJT from a personal contact more than doubled the chances of participating in CETA-OJT during 1979.

The second wave of the employer survey is an even better data set for studying the effects of government-initiated contacts promoting TJTC. The effect of such contacts on an employer's use of tax credits for hiring disadvantaged workers during 1980, 1981, and 1982 were studied by estimating probit models predicting whether and how firms used TJTC. The 80.4 percent of our sample of employers who reported having heard of TJTC were asked two questions about government-initiated contacts endeavoring to promote the TJTC program. The first question began as follows: "Have you or any of your staff

spoken to a representative of government, a trade association, or a local business organization about these tax credits?" The 36 percent who answered yes were than asked by whom the initial conversation about tax credits was initiated. The responses were "you" (17.6 percent), "your staff or company" (13.8 percent), by "government" (43.8 percent), "a trade association" (4.3 percent), "a local business organization" (7.2 percent) or "other" (8.5 percent). Thus, 12.9 percent of the sample of employers were personally contacted about TJTC by a government official.

The second question about government contacts was, "Have you been asked by the employment service or any other agencies to accept referrals of job applicants who are eligible for Targeted Job Tax Credits or Work Incentive tax credits?" Twenty-one percent responded that they had received such a request. Considerably fewer (only 13 percent) of the firms reported having a conversation about TJTC that was initiated by a government official. Approximately 10 percent reported both types of interactions. In many of these cases one conversation probably produced yes answers to both questions.

Both kinds of contacts had large, statistically significant impacts on the probability that a firm would participate (i.e., would hire at least one certified eligible new hire in TJTC). Table 7.1 presents estimates of the mean change in percent participating and the percentage increase in participation that are induced by each type of government-initiated contact. Contacts with an employer that include an offer to refer TJTC-eligible job candidates to the firm have a much larger impact on participation, than trying to certify eligibles and knowingly hiring TJTC eligibles. Participation probabilities of a typical firm (i.e., a firm that was average on all the dimensions used to characterize firms) more than double (see column 4) when a referral was offered but increased by only 57 to 66 percent when the personal conversation did not include the offer of a referral.

The purpose of TJTC is to induce changes in recruitment strategies and hiring selections. Four of the outcomes analyzed in table 7.1 can be considered indicators of such changes: accepted referrals of TJTC eligibles, plans to request a referral in the future, knowingly hired TJTC eligibles, and had a conscious policy of trying to select TJTC eligibles. Although firms

could always take the initiative and request that TJTC eligibles be referred to them, referral relationships were more commonly started by a government-initiated contact. Even though 35 percent of the firms asked to accept a referral turned it down, contacts that offered such referrals increased the typical firm's chances of receiving and considering a TJTC-eligible referral by 498 percent (line 7 of table 7.1). In addition, plans to request a referral in the future rose by 81 percent and the probability of knowingly hiring TJTC eligibles rose by 140 percent.

Personal conversations not tied to a referral offer seemed to be slightly more effective in inducing firms to try to select TJTC eligibles (i.e., either recruit or give hiring preference to TJTC eligibles) than offers of a TJTC-eligible referral. Government-initiated conversations increase the probability of adopting such a policy by 69 percent, whereas referral offers increased it by 57 percent. Clearly, personal contacts by government officials promoting the program had large and significant effects on participation rates.

7.2 Who Should be Contacted First?

There are more than 3.5 million hiring entities in the United States (U.S. Department of Commerce 1981) and it is not feasible to make personal contacts at every single firm and establishment. Should the agencies with the responsibility of finding jobs for disadvantaged TJTC eligibles target their personal contacts to--

- large employers or small employers?
- establishments that are part of a larger corporation or independent, owner-run establishments?
- establishments with personnel directors or companies where the manager does the hiring?
- the membership of local business organizations or firms not already in one of these organizations?
- companies with high turnover or companies with low turnover rates?
- companies that predominantly employ workers who are under the age of 25 or companies that do not currently employ many young people?
- companies with jobs that require a great deal of training or companies with jobs that do not require much training?

companies with long probationary periods, companies with short probationary periods, or companies with no probationary periods?

How personal contacts should be targeted depends upon the goals of program administrators and the impact of personal contacts on the achievement of these goals. This section selects three indicators of program participation and effectiveness and then examines how the response of these indicators to a government-initiated contact varies with the character of the firm. The three indicators that are studied in depth are (1) whether an employer participated in the program between September 1981 and April 1982, (2) whether the employer tried to select TJTC eligibles, and (3) whether the employer plans to ask for TJTC-eligible referrals in the future. Once the behavioral relationships are outlined, a subsequent section will examine the connection between program goals and targeting.

Government offers of TJTC-eligible referrals were the most common form of government-initiated contact and had larger effects than contacts that did not simultaneously offer to refer eligible job applicants. Consequently, the analysis focuses on the impact of referral offers on TJTC participation. The basic model of participation that was estimated and discussed in chapter 3 was reestimated with the following additional variables: a dummy variable for government-initiated conversations, a dummy variable for government-initiated referral offers and a set of interactions between referral offer and size of establishment, size of firm, establishment has a personnel office, company is a member of a local business organization, new hire rate, proportion of employees under the age of 25, amount of training required, and length of probationary period. The predicted probability of participating when there has been a government offer of TJTC referrals can be obtained by adding columns 1 and 2 of table 7.2.

Estimates of how the response of participation to referral offers varied with the firm's characteristics are presented in table 7.2. The first, third, and fifth columns present participation probabilities for companies that had not received any government contacts or referral offers. The second, fourth, and sixth columns present estimates of the increase in participation probability that resulted from a government offer of TJTC-eligible referrals.

TABLE 7.1

THE INCREASE IN USE OF TJTC DATA DUE TO A GOVERNMENT-INITIATED CONTACT

	(1) Percent Responding Yes to Question	Change in Percentage Using TJTC		Percentage Increase in Use of TJTC by Typical Firm	
		(2) Offer of a Referral	(3) Personal Conversation	(4) Offer of a Referral	(5) Personal Conversation
Participated in 1980	7.2	5.2 (7.4)	2.9 (3.4)	122	66
January 1981-thru Sept. 1981	7.1	3.8 (6.7)	2.0 (3.0)	125	66
October 1981-Interview Date	5.6	2.7 (5.5)	1.4 (2.4)	113	57
Tried to Certify Eligibles	14.4	8.9 (6.9)	3.5 (2.3)	78	31
Tried to Select Eligibles	5.5	2.0 (2.9)	2.4 (3.1)	57	69
Certified a Hire Known to Be Eligible When Hired in 1980-81	6.4	3.8 (7.2)	1.6 (2.6)	140	57
Received a Referral of a TJTC Eligible	15.2	23.7 (28.8)	2.0 (2.1)	498	43
Plan to Request TJTC Referral in the Future	21.2	15.4 (9.3)	10.2 (5.1)	81	53

Figures in parenthesis are the ratio of the coefficient to its standard error or, equivalently the t statistic when N equals ∞. Except for the addition of the 2 dummy variables for government-initiated contacts, the models that yield these estimates are identical to those presented in tables 3-2, 3-3, and 3-4 of chapter 3.

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TABLE 7.2

IMPACT ON THE USE OF TJTC OF GOVERNMENT INITIATED OFFERS TO REFER TJTC ELIGIBLES

	Participation after September 1981		Tries to Select TJTC Eligibles		Plans to Ask for Referrals In Future	
	(1) Percent When No Gov't. Contact	(2) Increase Due to Gov't. Contact	(3) Percent When No Gov't. Contact	(4) Increase Due to Gov't. Contact	(5) Percent When No Gov't. Contact	(6) Increase Due to Gov't. Contact
Size of Establishment						
200 employees	7.9	5.0	5.2	3.1	21.2	3.6
18.4 employees	2.3	2.7	3.3	3.7	18.9	15.6
2 employees	.5	1.1	2.1	3.9	17.0	27.6
Size of Firm						
Same as establishment	2.2	2.3	2.8	4.2	18.5	16.2
Ten times establishment size	2.8	4.0	5.5	1.5	20.6	13.0
Personnel Office						
Yes	3.5	.5	6.7	2.7	18.0	16.0
No	2.1	2.9	3.0	3.9	27.6	10.9
Member of Local Business Organization						
Yes	2.7	1.0	3.9	5.3	19.9	16.5
No	1.9	4.6	2.7	2.6	18.0	14.7
New Hire Rate						
50 percent	4.7	3.9	4.6	3.9	19.9	13.0
10 percent	1.5	2.1	3.8	3.6	18.5	12.8
Employees Younger than 25						
75 percent	2.9	9.9	2.5	9.3	17.0	27.9
10 percent	2.1	1.2	3.6	2.1	19.7	11.4
Required Training						
One year	2.7	1.5	3.8	4.7	20.2	20.9
One week	2.0	3.7	2.9	3.0	17.9	11.3
Probationary Period						
None	1.5	4.8	2.9	2.7	14.0	14.0
One month	3.6	.0	5.0	4.4	20.0	17.9
Six months	1.6	4.2	2.0	3.6	21.4	13.5
Firm with 200 Employees, 75% of Which Are under 25 With New Hire Rate of 50%						
No Personnel Office, Member Business Organization	5.3	15.7	6.2	13.0	19.9	13.7
No Personnel Office, Business Organization, 1 Yr. Training Required	12.7	10.4	7.0	15.3	21.2	19.0
No Personnel Office, Business Organization, 1 Yr. Training Required, 1 Mo. Probationary Period	25.3	-0.2	12.1	19.0	22.4	17.6
Personnel Office, No Business Organization	12.4	19.6	9.0	10.0	27.5	6.9
Pers. Of., No Bus. Org., Firm 10 times est.	21.4	23.5	13.5	5.6	29.8	3.7
Pers. Of., No Bus. Org., Firm 10 times est., 1 Week of Training Required	15.0	28.0	12.3	4.5	28.4	0.0

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The effect of a firm's characteristics on its probability of participation can be examined by comparing adjacent rows of the table. The effect of establishment size, for instance, is described in the first three rows. Whether or not they received a government contact, large establishments were considerably more likely to participate. Holding other characteristics constant, going from 18 employees to 200 raised the percent participating between September 1981 and the interview date from 2.3 to 7.9 percent when there was no contact, and from 5 to 12.9 percent when there was a referral offer.

Note that the increase in the probability of participation when a contact occurs was also larger at the big firms. This pattern recurred for a number of other employer characteristics. Establishments that are a part of a large multiplant firm were somewhat more likely to participate when there was a government initiated contact and were considerably more likely to respond when there was a referral offer. High rates of turnover and hiring and large proportions of the work force under the age of 25 indicated that an employer had large numbers of job openings for which young disadvantaged workers might be qualified. Both of these characteristics were associated with higher probabilities of participation when there was no contact and with larger increases in participation when there was a referral offer. At companies at which three-quarters of the work force were younger than 25 years old, the percent participating rose from 2.9 percent to 12.8 percent when a referral offer was made.

For certain other characteristics of the firm, however, the type of firm that responds most dramatically to the offer of a referral was also the type that was least likely to participate in the absence of a government-initiated contact. Employers that were not members of local business organizations and that did not hire through personnel offices were less likely to participate if there was no government-initiated personal contact, but were more likely to participate if there was a referral offer. Firms that had either no probationary period or a long one and that offered little training were also less likely to participate absent a contact, and were more likely to participate if there was a referral offer.

Plans to Participate in the Future

At the end of the sequence of questions about TJTC, the respondents were asked whether they planned to request a referral of a TJTC eligible when they

needed to hire unskilled workers in the future. Approximately 17 percent of the employers in the sample responded affirmatively. Among firms not receiving contacts about the program, the characteristics of the firm did not appreciably affect the likelihood of an employer planning to request a referral in the future (see column 5 of table 7.2). The only exceptions to this generalization were that firms without a personnel office and probationary periods for new hires were more likely to plan to request referrals in the future.

The primary difference between a plan to participate in the future when there is an unskilled opening and actual past participation is probably "opportunity." Many respondents hired no unskilled workers between September 1981 and the interview date, and consequently did not have an opportunity to participate in TJTC. Others hired only one or two. Many of the employer characteristics that had major impacts on participation but not on plans were measures of opportunity (e.g., the size of the firm, the new hire rate, and the proportion of employees under the age of 25).

The nature of the firm did, however, have a large effect on the response of a firm's plans to the offer of TJTC-eligible referrals by a government agency (see column 6 of table 7.2). At a small firm, such offers dramatically increased plans to ask for referrals in the future. The percent planning to request referrals rose by 27.6 percentage points (from 17 to 45 percent) at firms with only 2 employees, but rose only 3.6 percentage points (from 21.2 to 24.8 percent) at establishments with 200 employees. The increase in planned participation was also considerably larger at companies with a personnel officer, that offer more than the average amount of training, and that have a predominantly young work force.

Changes in Hiring Practices Because of TJTC

Probably the best single measure of whether employers are changing their hiring practices in ways that will increase their hiring of the disadvantaged is the answers that were given to the following question: "Does your company make any effort to select new employees who are tax-credit-eligible?" Affirmative answers were given by 5.5 percent of our respondents and by 29 percent of those who had certified at least one TJTC eligible. In the absence

of a government agency contact the companies that were most likely to report trying to select TJTC eligibles--

- had many employees
- were part of a large multiplant firm
- had a personnel office
- were members of a local business organization
- had a high rate of turnover and hiring
- had a work force predominantly over the age of 25 (such a firm would not be able to use TJTC without a conscious change in recruitment or hiring policies)
- had jobs that required a great deal of on-the-job training
- had a short probationary period (rather than none or a long one)

Offers of a referral tended to have the greatest impact on adoption of a conscious policy of selecting TJTC eligibles when the boss (probably the owner) makes the hiring decisions, (i.e., there was no personnel officer and the establishment was small and not a part of a multiestablishment firm). Members of local business organizations were also more likely to respond to a personal contact by consciously trying to select eligibles. Probably, these firms were more exposed to and were subject to appeals that hiring disadvantaged workers is part of their civic obligation. Other features of the firm associated with bigger responses to a contact were having a predominantly young work force, having jobs that require a great deal of training, and having a short probationary period.

7.3 Goals of the Program and Program Administrator

The preferred outreach strategy will also depend upon the goals of the program and its administrators. The connection between goals and outreach strategy is described in table 7.3. The agency administering TJTC is assumed to be subject to a budgetary constraint that places a limit on the number of employers with whom the staff can initiate personal contacts. If the goal (goal 1) is to maximize the participation rate amongst contacted firms, the outreach should be targeted to firms with the highest probability of participating when contacted.

If the goal (goal 2) is to increase the number of participating firms the policy will/should be to target the type of firms that have the largest

TABLE 7.3

CONNECTION BETWEEN PROGRAM GOALS
AND THE TARGETING OF OUTREACH

	Program Goal	Whom to Target
1.	High participation rate among contacted firms	Those with the highest probability of participation
2.	Increase number of participating firms	Those with the largest ΔP--predicted increase in participation due to a personal contact
3.	Increase number of TJTC certifications	Those with the largest ΔC--predicted increase in the number of eligibles subsidized due to a personal contact
4.	Increase the hiring of TJTC eligibles	Those with the largest $(C\|S)\ \Delta S$--increase in the number of firms that say they try to select TJTC eligibles due to personal contact times the number of TJTC's eligibles hired
5.	Increase the employment of TJTC eligibles	Adjust policy 4 for probable retention rate
6.	Increase the quality of the jobs TJTC eligibles obtain	Adjust policy 4 for the quality of the jobs obtained by TJTC eligibles

increase in participation rate (columns 2 and 6 of table 7.2) when a personal contact is made. This goal is somewhat more appropriate than the first goal--having a high hit rate--because many of the firms would participate even without a personal contact. The fourth line from the bottom of table 7.2 illustrates the reason for preferring goal 2 to goal 1. Firms of this type are predicted to have very high participation rates (25.3 percent), but a contact does not increase the participation rate.

Goals 1 and 2 relate to numbers of firms benefited rather than the number of disadvantaged clients served. The number of TJTC placements that might be made at a firm must be considered when deciding which employers should be contacted first, so goal 3 (i.e., increase the number of TJTC certifications) is probably a more appropriate goal for the program than either 1 or 2. Relative to the priorities implied by goal 2, this tends to imply that large firms hiring large numbers of entry-level workers should be the first to be contacted.

If the TJTC program were only to reward firms for hiring disadvantaged workers they were going to hire anyway, it would not achieve its purpose. The program's real purpose is to induce firms to expand their hiring of welfare recipients and other disadvantaged workers. If this is the goal (goal 4), personal contacts should be targeted at those firms that can be persuaded to change their recruitment or selection policies and increase their hiring of disadvantaged workers. The employer's response to the question, "Does your company make an effort to select new employees who are tax-credit-eligible?" is a reasonable proxy for TJTC-induced changes in hiring practices. Consequently, column 4 of table 7.2, is adjusted for the expected number of TJTC claims, it yields an estimate of the impact of outreach efforts on goal 4.

Increased hiring of the disadvantaged is not the sole objective of TJTC. A secondary goal of the program is to raise the duration (goal 5) and quality (goal 6) of the jobs that welfare recipients and disadvantaged youth obtain. There is probably a trade-off between recruiting employers who will increase their hiring of the disadvantaged and recruiting employers who offer good, long-lasting jobs to the disadvantaged. Any effort to induce employers who offer "good" jobs (i.e., jobs with training, job security and opportunities for advancement and job security) to hire youth from disadvantaged backgrounds

or welfare recipients must deal with the fact that these employers can afford to be selective and typically are selective about whom they hire. Disadvantaged youth and welfare recipients have a difficult time competing for these popular jobs. Many employers believe that when they hire a disadvantaged youth or a welfare recipient, they take a greater-than-normal risk that the employee will not work out and they will have to fire the employee. One of the qualities that makes a "good" job "good" is protection from arbitrary discharge. Such protections raise the firm's cost of firing and thus cause firms that offer "good" jobs to be reluctant to hire job applicants whom they perceive have a higher-than-average risk of firing.

Analysis of the first wave of the employer survey has found that, controlling for size and a host of other variables, firms that demonstrated a willingness to fire employees by actually doing it in the previous year were considerably more willing to participate in subsidy programs targeted on disadvantaged workers than firms that had not fired anyone recently (Bishop and Montgomery 1984). Consequently, one of the important issues to address is how responsive the firms that offer the better jobs are to personal contacts by government officials. This can be tested by interacting variables describing the quality (e.g., training, job security, capital intensity, etc.) of the jobs each firm typically offers to entry-level workers with the dummy for being personally contacted by a government official.

The goal that seems most appropriate to the author is a combination of goals 5 and 6--increasing both the employment of TJTC eligibles and the quality of their jobs) with priority given to goal 5 rather than 6. An examination of table 7.2 reveals that in order to achieve these goals, outreach efforts and offers of TJTC-eligible referrals to companies that are not already participating should be targeted at employers that have the following characteristics:

- Many employees
- A high proportion of its work force under the age of 25
- A single establishment firm (policies are set at the local not the national level)
- Low turnover
- Growing employment
- A member of a local business organization
- No personnel office
- Offers a great deal of training
- A short probationary period

CHAPTER 8

SUMMARY AND POLICY IMPLICATIONS

This chapter examines the two major problems faced by the Targeted Jobs Tax Credit program--low participation and uncertain cost-effectiveness--and then suggests (1) ways TJTC can be improved and (2) alternative subsidy schemes that should enable greater impact and cost-effectiveness.

8.1 The Problem of Low Participation

TJTC is currently helping less than 10 percent of the pool of young people eligible for the program. There are four primary causes for TJTC's low participation rate as follows:

1. For a long time, most employers were not aware or were only vaguely aware of the program. A 1980 survey of employers found that only 17 percent of all employers representing establishments responsible for 33 percent of all employment reported being "familiar" with TJTC (EOPP Employer Survey). Firms that reported being familiar with the program often knew very little about it. The program is now much better known. A 1982 resurvey of these same employers found that 77 percent had "heard" of TJTC[1] and 19 percent had spoken to a representative of government or a trade/business organization about the program. Most employers continue to know very little about the program, however, and many of their beliefs about the program ("paperwork is burdensome," "eligibles do not make good workers") are not based on actual experience but rather on the general bad reputation of government in the business community or prior experience with other programs like CETA.

2. Many firms are not able to benefit from the TJTC either because they do not have tax liabilities which the tax credit may reduce, because they are not hiring, because they are required to rehire laid-off employees first, or because they do not hire unskilled and untrained entry-level workers.

3. There is a stigma attached to being a member of most of the TJTC's target groups. Employers perceive the program to be subsidizing people who do not make good workers. This reduces the likelihood that employers will ask the employment service to refer TJTC-eligible workers to their firm. Furthermore, many applicants feel that telling prospective employers of their eligibility for TJTC may hurt their chances of getting the job.

4. The complicated rules of eligibility mean that most employers are unable to identify job seekers who are eligible on their

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own and that government agency certification of employee eligibility is therefore necessary. This has three disadvantages: (1) it often forces the firm out of its traditional recruitment channels; (2) employers fear that it will introduce red tape into the hiring process or bring about unwelcome government interference (the costs of identifying and certifying who is eligible are thus major deterrents to participation); and (3) the program's success depends upon cooperation between private business and government.

An Assessment

TJTC is structured so that referrals of eligibles by labor market intermediaries are not essential to its operation. Some of the designers of TJTC expected other mechanisms of matching eligibles to jobs to predominate (i.e., job seeker announcements of their eligibility to prospective employers and employer screening of pools of job applicants for eligibles). The option of bypassing labor market intermediaries has not produced the high participation rates that were anticipated, however, and the cost-effectiveness of the program has probably suffered. Despite the availability of alternatives, the primary mechanism by which firms match up with eligible workers is still through referrals by labor market intermediaries.

This is not an undesirable phenomenon. In fact, the energies of program administrators should focus on making referrals the primary mechanism by which employers identify TJTC-eligible job candidates. Promotional efforts designed to induce nonparticipants to give the program a try should simultaneously sell the following:

- The tax credit (e.g., "The paper work is small; we will make the certification process convenient; it can have a big effect on the bottom line.")
- The TJTC eligibles (e.g., "They make much better workers than you may anticipate.")
- The screening and referral service of the agency (e.g., "We will send you someone promptly; we will inform you if the person has a criminal record; we will send you candidates who are qualified for your job.")

Agency staff with contacts at firms that already participate in the program should try to persuade the firm to accept additional referrals of TJTC eligibles and to give them hiring preference.

It is not clear whether a job seeker's volunteering that he or she is a TJTC eligible increases or decreases the person's chance of being hired. The two experiments imply that there is still probably a significant minority of employers for which TJTC eligibility is a negative rather than a positive. There will probably always be some employers with this view, for many cannot benefit because they lack a tax liability and others have such a negative view of the target groups that they will probably never participate. As a result, the best strategy is for referring agencies to make the initial approach to the firm. If the firm's response to the explanation of the tax credit and the offer of eligible referrals is positive, referrals can be made. Disadvantaged workers who are referred need not even mention the tax credit and can concentrate on selling themselves. Expecting the job seeker to promote or explain the program is probably unwise.

The disadvantaged worker's job search should not be limited to firms contacted by the labor market intermediary. Direct application should be made to other firms. If the employer asks whether the applicant is eligible for TJTC, an affirmative answer should be given, but if the subject is not brought up by the employer, applicants should not mention their eligibility.

The primary goal of TJTC's marketing strategy should be increased cost-effectiveness, not increased usage. The cost-effectiveness of TJTC is increased if labor market intermediaries are the primary mechanism by which employers find TJTC eligibles. When a firm initiates a request or agrees to an offer of TJTC-eligible referrals and later hires some of these referrals, the firm's hiring selections are almost certainly being influenced. When employers do their own screening or respond to volunteered information about a job applicant's eligibility for TJTC, it is less certain that the tax credit is inducing desired changes in employer behavior. Many of the employers who report screening and identifying eligibles on their own also report that this screening does not influence hiring selections. Some employers do not allow the hiring officer access to the information on eligibility; other employers report doing the screening after the hiring selection is made.

Participation rates will suffer, however, if labor market intermediaries are the primary mechanism of bringing eligibles and employers together. Many

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employers are reluctant to accept referrals from government agencies, such as the employment service. In the 1982 NCRVE employer survey, 70 percent of the employers with vacancies did not list the job opening with the employment service (Bishop, Barron, and Hollenbeck 1983). As a result, even though 34 percent of all workers had checked with the employment service during their last period of job search, only 5.1 percent had gotten their jobs through an employment service referral (Rosenfeld 1975).

Informal recruitment mechanisms are much more popular. About 35 percent of all jobs were found by applying directly to the firm without suggestions or referrals, and another 26 percent were obtained by applying directly to the firm at the suggestion of a friend or relative (Rosenfeld 1975). Most firms prefer to hire people who are recommended by either a current employee or another employer or who have shown their desire for the job by applying for it in person. Employers prefer these informal recruitment channels because (1) such channels are faster, (2) employers do not become inundated with job applicants who must be interviewed, (3) they can avoid dealing with government, and (4) they believe that job candidates obtained from informal sources will probably be more productive and less likely to quit or be dismissed.

This preference acts to limit the market penetration of any program for finding jobs for the disadvantaged that depends upon a labor market intermediary (e.g., the employment service, a school's placement office, a WIN office, or a JTPA subcontractor such as the Urban League). Such a program is bound to be only partially successful helping some of the people who approach the agency but failing to reach most of the eligible population.

This comment is even more pertinent to other programs designed to help the disadvantaged find employment, such as JTPA classroom training or on-the-job training, work experience programs at high schools and junior colleges, public service employment, and job clubs. The important point to remember is that even though TJTC is a voucher entitlement, its success still depends on how well it is administered by local public officials. TJTC is closer to being self-administering than these other programs. However, the fact that it is targeted on difficult-to-identify groups that may be stigmatized once identified means that it probably can never achieve the high participation

rates of less-targeted tax incentives such as the New Jobs Tax Credit, the Investment Tax Credit, and the Research and Development Credit.

The agencies that administer TJTC at the local level have a critical role to play even when agency referrals are not the primary way employers recruit and identify eligible job candidates. The agencies must market the program. Chapter 7 demonstrated that employer participation in TJTC was quite responsive to personal contact by job developers and other local administrators of the program. For example, a demonstration of employer subsidies on Wisconsin was able to recruit a high proportion of the firms contacted (Public Private Ventures, 1983). Not only do these contacts inform employers of the program's existence, but they also greatly increase the probability that knowledgeable firms will participate.

The importance of local outreach and promotion is further supported by the dramatic differences between states in the proportion of their disadvantaged youth that are served by the program. Estimates for 1983 show that Vermont, for instance, vouchered 35 percent of their eligible youth and certified 9.2 percent, whereas New Hampshire vouchered only 10 percent and certified 3.8 percent. Kansas vouchered 29 percent and certified 11.6 percent of eligibles, but Colorado vouchered only 2.9 percent and certified only 2.5 percent. Maryland vouchered 21 percent and certified 8.6 percent, yet Delaware vouchered only 7.6 percent and certified 3.7 percent. The rates of vouchering and certification of eligible youth for all 50 states for that year are presented in figures 8.1 and 8.2 and table 8.1. The willingness of firms to participate in these programs does not vary dramatically from state to state; what do vary are the policies and commitment of the local administrators of the program.

The TJTC program has suffered from long delays in the publication of IRS regulations and insufficient funding of the administrative costs of vouchering and certifying workers. Some state employment service agencies have taken the position that when the federal money specifically set aside for the administrators of TJTC is exhausted, they will stop vouchering and certifying eligibles. In 1979, for example, when the federal contribution to administrative costs ran out in the state of Wisconsin, certifications dropped to almost zero for the final 3 months of the year.

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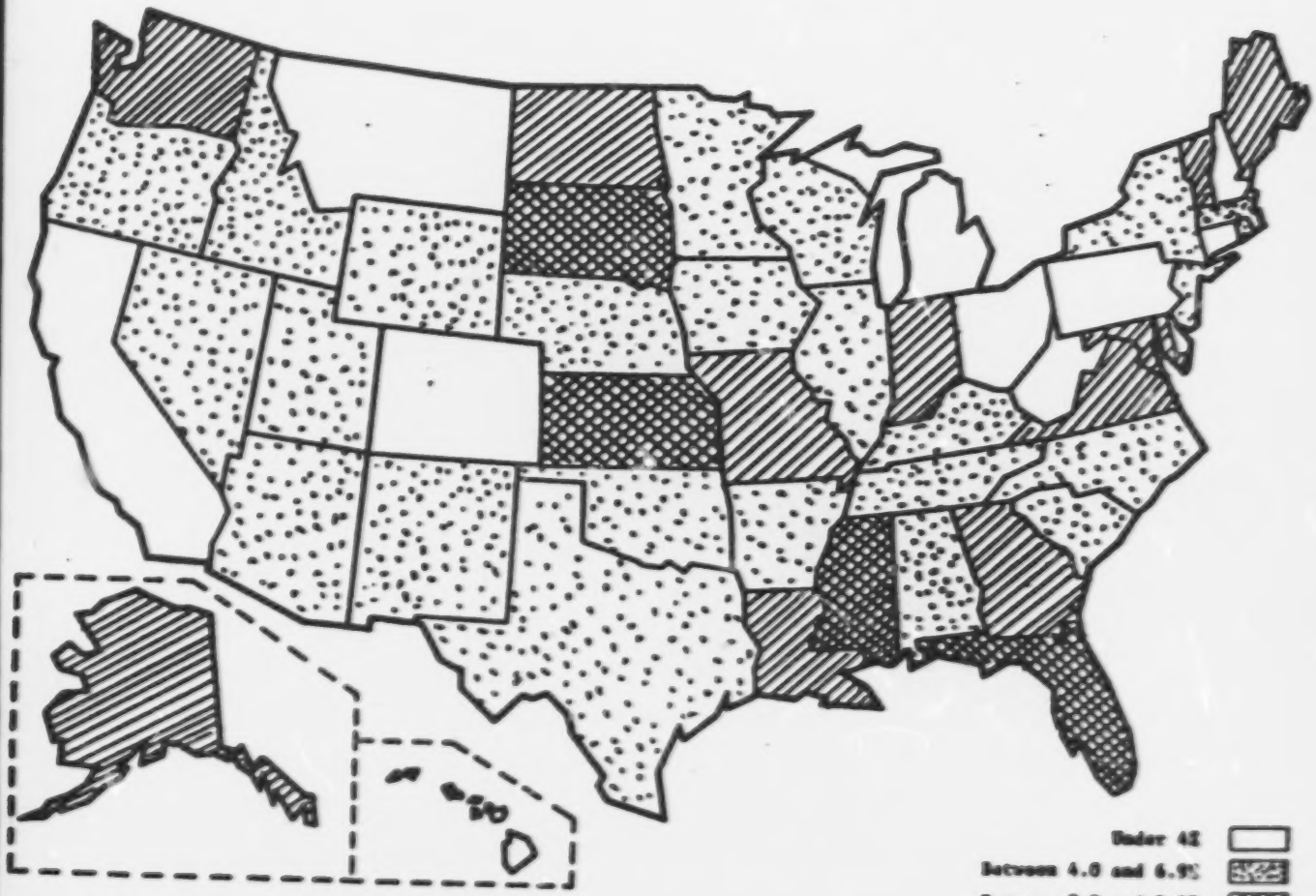

Source: Ratio of disadvantaged youth TJTC certifications in FY 1983 to a Congressional Budget Office estimate of the number of eligibles in each state based on the CPS.

Figure 8.1. Percent of disadvantaged youth obtaining a TJTC certified job

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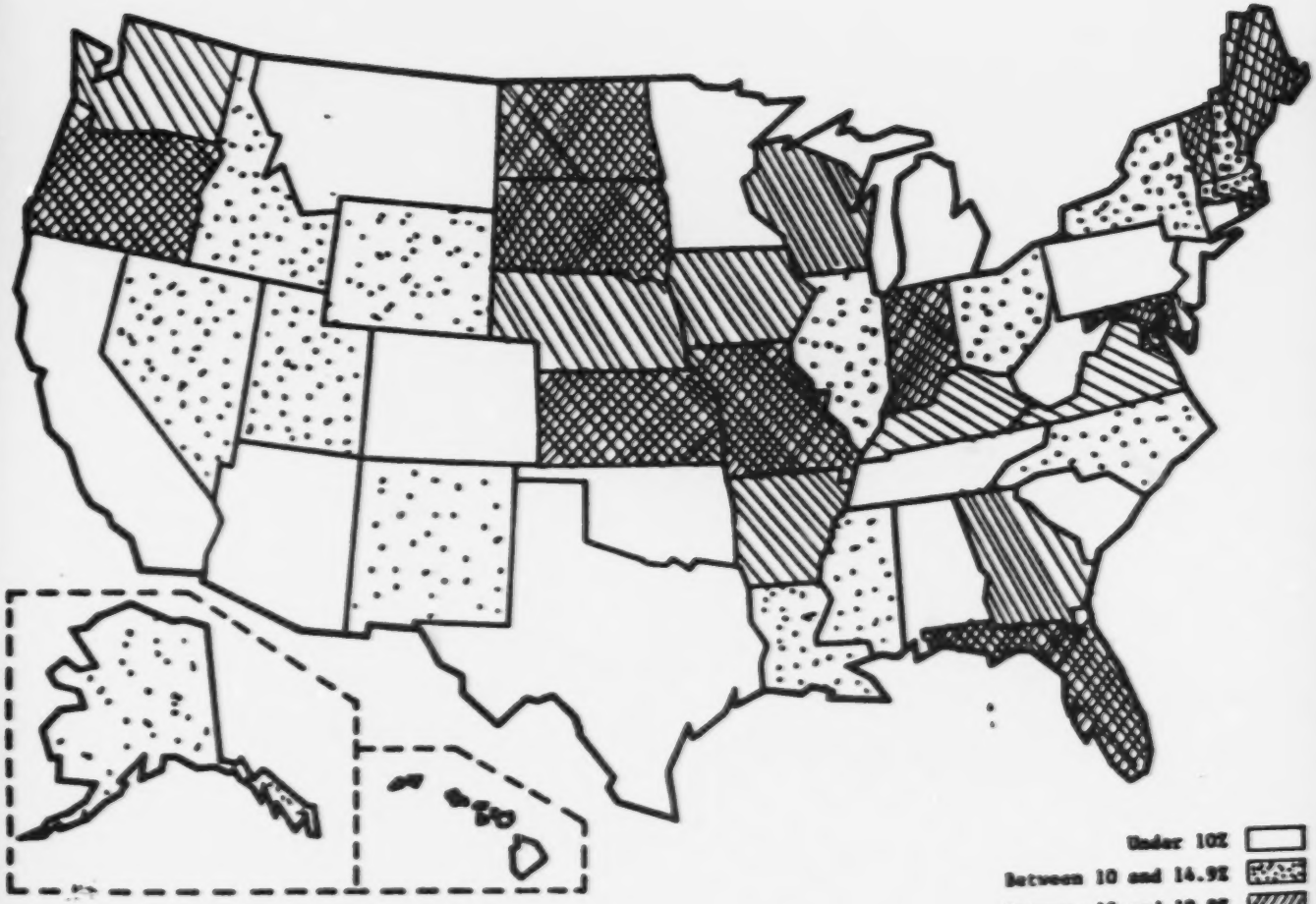

Source: Ratio of disadvantaged youth TJTC vouchers in FY 1983 to a Congressional Budget Office--estimate of the number eligibles in each state based on the March 1983 CPS.

Figure 8.2. Vouchering of eligible disadvantaged youth--FY 1983

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TABLE 8.1

TJTC VOUCHERING AND CERTIFICATIONS
IN FY 1983 STATE
(In percent)

	Disadvantaged Youth		Total		Disadvantaged Youth		Total
	Vouchers Eligible	Certif Eligible	Certif Empl in Service		Vouchers Eligible	Certif Eligible	Certif Empl in Service
Alabama	9.7	5.3	1.9	Montana	7.4	3.8	.7
Alaska	14.6	9.1	2.0	Nebraska	15.7	5.7	.7
Arizona	8.9	4.2	1.1	Nevada	10.9	5.7	.7
Arkansas	16.0	5.2	2.1	New Hampshire	10.1	3.8	1.4
California	7.0	3.6	.7	New Jersey	9.1	4.6	.7
Colorado	2.8	2.5	.5	New Mexico	10.4	4.0	1.4
Connecticut	6.9	2.9	.4	New York	11.6	4.6	.9
Delaware	7.6	3.7	.7	North Carolina	10.1	4.5	1.7
District of Columbia	13.2	5.0	.9	North Dakota	22.9	8.6	1.3
Florida	21.7	10.3	1.4	Ohio	10.0	3.4	.8
Georgia	17.8	9.1	1.9	Oklahoma	9.3	4.5	.7
Hawaii	4.3	1.9	.5	Oregon	20.0	6.0	1.5
Idaho	14.3	5.3	1.6	Pennsylvania	4.3	2.1	.6
Illinois	11.2	4.6	1.0	Rhode Island	11.6	5.4	.7
Indiana	28.5	7.5	1.2	South Carolina	9.0	4.6	2.0
Iowa	15.0	6.0	1.2	South Dakota	24.0	11.0	2.0
Kansas	29.1	11.6	1.1	Tennessee	7.5	4.4	1.3
Kentucky	18.9	6.6	1.8	Texas	8.6	4.6	.8
Louisiana	13.0	9.3	2.1	Utah	10.0	5.2	1.4
Maine	22.5	7.5	1.8	Vermont	33.2	9.2	1.8
Maryland	21.3	8.6	1.3	Virginia	18.2	7.5	1.1
Massachusetts	13.2	6.9	1.0	Washington	18.2	8.8	1.3
Michigan	7.4	3.0	1.2	West Virginia	7.5	2.3	.8
Minnesota	9.0	5.8	1.0	Wisconsin	15.2	5.1	1.1
Mississippi	12.2	10.1	2.6	Wyoming	10.0	5.0	1.1
Missouri	21.4	7.0	1.5				

The number of TJTC voucher and certifications is taken from a report prepared by the USES Office of Planning and Review dated December 27, 1983. The Estimate of the number of eligibles is based on tabulations of the Current Population Survey by the Congressional Budget Office. The number of employees in wholesale and retail trade and services other than finance was obtained from Employment and Earnings.

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In other cases local employment service offices have apparently not known how the program operates. One employer in the Pacific Northwest found his local employment service ignorant of TJTC and uncooperative, as well. He claimed they were not even set up to certify the eligible workers that he found and hired; he had to go down to the office to teach the staff there how to certify someone. States such as Vermont, Maryland, Kansas, South Dakota, Florida, and Mississippi seem to be doing a good job of promoting the program. Research is needed on what aspects of these states' marketing program has enabled them to achieve higher-than-normal participation rates.

8.2 The Problem of Cost-Effectiveness

The purpose of the TJTC program is to induce firms to increase their hiring and training of disadvantaged workers. The program can be considered cost-effective only if (1) a reasonable proportion of TJTC certifications represent an increase in hiring of targeted workers and (2) this hiring does not result in other similarly disadvantaged workers not being able to find a job.

The fact that only a small number of employers choose to participate in a program does not necessarily imply that the program is not cost-effective. The low rates of employer participation may suggest that nonpecuniary costs of participation are high for many firms. Some of these costs (e.g., learning enough about the program to use it, making arrangements for the referral of eligible workers, establishing a system to identify which job applicants are eligible, and risking scrutiny from the Equal Employment Opportunity Commission or the Internal Revenue Service) are fixed (i.e., do not rise with the number of eligibles hired). These costs discourage participation, but for those who do participate, they should have no systematic effect on the impact of the subsidy on employment.

Other nonpecuniary costs depend upon the number of workers hired through the program. The variable costs are the costs of searching for, identifying, and certifying eligible workers and the risk of hiring workers who may be less productive than the typical unsubsidized job applicant. These costs lower the net benefit of hiring extra subsidized workers and therefore reduce the impact of the subsidy on participating firms.

The study of participation suggests that, for TJTC and WIN, fixed costs are an important deterrent to a firm's participation in these programs. Many of the firms that choose to participate seem to participate heavily. Even though less than 1 percent of all workers are subsidized, the typical subsidized worker is working in an establishment at which 14.6 percent of the firm's employees are subsidized. This suggests that, in some of the participating firms, the marginal costs of hiring subsidized workers are and remain low as the employer expands employment of subsidized workers. Thus the fact that participation rates of firms are low cannot be taken as evidence that a program has zero or only small effects on those firms that choose to participate. In fact, a reasonable argument can be made that the partial equilibrium response (extra employment) per dollar of expenditure will be bigger in a small program than a large program.

When there are important fixed costs to participation, firms with high elasticities of demand for the subsidized class of workers and low marginal costs of certifying extra workers are more likely to participate than firms with low elasticities of demand and high marginal costs of participation. As a result, one might expect that the first firms to volunteer to participate will be more responsive than the firms that are convinced to participate at a later date.

There are, however, other reasons for being concerned about the present cost-effectiveness of TJTC. Four types of evidence are available:

1. Econometric estimates of employer response
2. Experiments in which eligible job seekers were taught to announce their eligibility to prospective employers
3. Survey responses by employers about how they were influenced
4. Data on the relative productivity of TJTC eligibles

To date, there have been three attempts at an econometric evaluation of the impact of TJTC on the employment levels of participating firms. The first study (Bishop and Montgomery 1984) estimated models separately for different size establishments predicting employment growth from July 1979 through December 1979. TJTC had no impact on establishments with fewer than 20 employees, but had a large and significant impact on establishments with 21 to 100 employees and had an important (though not statistically significant) impact on

establishments with more than 100 employees. Because most employment is in large establishments, the average (using employment shares as weights) increase in employment per subsidized hire was 0.3.

A study of employment growth in 1981 conducted by Sandra Christensen (1984) for the Congressional Budget Office found no impact on participating firms' employment levels. The study of these same data (presented in chapter 6) found that the estimated effect of TJTC usage depended upon the specification. When the TJTC usage variable is the ratio of TJTC certifications to employment and effects are allowed to shift when this variable reaches 0.5, TJTC utilization has a significant impact on growth (10 certifications increase employment by about 3) up to the point where the utilization ratio reaches 0.5 (and has no effect beyond that). When the TJTC usage variable is the ratio of TJTC certifications to new hires, estimated impacts of TJTC are essentially zero. The 1982 NCRVE employer survey has twice been used to study TJTC's impact on the share of employment that is under the age of 25, and both studies found it had a modest positive impact (Christensen 1984; chapter 6 of this document).

None of these studies, however, attempts to measure the general equilibrium effects of TJTC. If TJTC is inducing firms to lower their hiring standards (or raise their opinions of stigmatized groups), it can siugnificantly raise employment even when the firms that receive the subsidy do not expand total employment because of the program. To date, only one study (Christensen 1984) has used a methodology that measures something akin to general equilibrium effects. This study examined the impact of TJTC voucher rates in a state on the probability that eligible youth in the current population survey from that state were employed in March 1973. The estimated impacts were positive, statistically significant, and quite large.

The same study found no evidence that youth who were not income-eligible were displaced. Although, the coefficients were not statistically significant, high TJTC voucher rates were associated with higher (not lower) employment rates for noneligible youth. Besides controlling for numerous individual characteristics, the study controlled for a variety of characteristics of the local labor market (e.g., unemployment rate, the number of referrals by employment service offices, industry mix, central city, and non-SMSA) so the

coefficients on the ratio of TJTC vouchers to eligible youth seem to capture a true causal effect.

Experiments Where Job Seekers Announce Their Eligibility

As previously discussed, there have been two experiments (Burtless and Cheston 1981; Moran et al. 1982) where welfare recipients who were seeking employment were taught to announce their TJTC eligibility to employers when they applied for a job. In both experiments, the group that received this training had a lower placement rate than other eligible welfare recipients who did not receive this training.

These studies are based on very small samples and are not well documented, but they nevertheless suggest that, for most employers, signaling one's welfare recipiency may have powerful stigmatizing effects. One would not expect, however, that being a youth from a low-income family would be equally stigmatizing, and this presumption receives support in chapter 4's analysis of hiring priority ratings assigned by over 850 employers. In this data, TJTC eligibility had a modest statistically significant positive effect on the hiring priority ratings given.

Survey Responses

There have been four surveys in which employers were asked what impact TJTC had upon their hiring. In the spring of 1980, the EOPP employer survey asked the 313 employers reporting that they hired employees subsidized by TJTC, WIN, or CETA-OJT, "Did participation in the program we just talked about influence this establishment to expand total employment by more than might otherwise have been done?" Twenty-five percent of the firms said yes. They were then asked "How many additional employees were hired that wouldn't have been hired otherwise?" The total induced increase in hiring reported by the firms was 383. The total number of workers subsidized in all 313 firms was 1,896, so the ratio of reported job creation to certifications was 20 percent (Bishop and Montgomery 1984).

A Government Accounting Office survey of TJTC users in January 1980 asked, "To what extent did the tax credit influence your decision to hire workers from targeted groups; i.e., would you have hired them anyway?" Twenty-six

percent said their use of TJTC would increase employment level and 41 percent said they substituted some target hires for similar nontarget workers (O'Neill 1982).

Chapter 2 reviewed the responses to questions in the 1982 NCRVE employer survey about whether the employer was changing hiring policies because of TJTC. About 33 percent of the users said their final selection of who to hire was influenced by either a great or moderate amount. Weighted by their use of the program, 80 percent said they tried to select eligibles, 90 percent were receiving referrals of eligibles, and about half of the eligibles hired were referrals from agencies (probably in response to a specific request for TJTC eligibles).

In January 1984, 100 employers who had hired one TJTC eligible in a 21-month period ending 2 years previously were asked, "Was there ever an instance in your recollection when a tax-credit-eligible individual was given hiring preference because of the tax credit over another individual who was approximately as well qualified or more highly qualified?" About 21 percent of the respondents said yes. When those firms are given the appropriate weight, the firms reported changing who they hired about 17 percent of the time. They were also asked, "Can you think of any instance when your firm decided to make an opening in the firm to take advantage of a tax credit?" About 13 percent said yes. When those who reported doing it part of the time are given an appropriate weight, the proportion reporting being induced to increase employment was 7 percent (Hollenbeck 1984).

It should be noted, however, that a survey of employers who hired exactly one TJTC eligible between January 1980 and September 1981 does not represent the bulk of TJTC usage. TJTC certifications are highly concentrated. In 1983, for instance, Pizza Hut hired 6,366 TJTC-eligible employees in company-owned stores. Probably 50 to 100 firms are responsible for more than half of all TJTC certifications. The firms that recruit TJTC eligibles and give preference to TJTC eligibles when they select new employees will become the biggest users of the program. Data on these big users is essential if aggregate employer response to the TJTC is to be measured. As a result, surveys such as the one just reported significantly understate the magnitude of the aggregate employer response to TJTC.

Relative Productivity of TJTC Eligibles

The purposes of targeted employment subsidy programs are to induce firms to (1) hire disadvantaged workers for jobs that would otherwise have been filled by better qualified workers and (2) provide the extra training that these workers require to reach the productivity standard of the other workers in the firm. If the program is achieving this purpose, comparisons of subsidized and unsubsidized workers holding the same job (or controlling on the characteristics of the job and the firm) would show that subsidized workers have poorer credentials, are less productive, and require greater-than-average amounts of training.

Evidence on this issue is available from the 1980 EOPP employer survey, the 1982 NCRVE employer survey, and the 1984 NCRVE survey. In the 1980 EOPP survey, employers were asked to describe a randomly selected recent hire for an unskilled or semiskilled job. If they had also recently hired a subsidized worker, they were asked to give a similar description of that individual and the job that the subsidized individual filled. The other individual described did not have to be doing the same work.

Most of the subsidized workers were from the CETA-OJT program. Compared to unsubsidized workers at these same firms, CETA referrals were 15 percent less productive initially, 13 percent less productive at termination or the time of the interview, received 35 percent more training, and had a separation rate of 62 percent rather than 23 percent. Workers subsidized by WIN were 14 percent less productive initially, 11 percent less productive at termination or the time of the interview, received less training, and had a separation rate of 47 percent. TJTC-subsidized workers were 14 percent less productive initially, but only 3 percent less productive at termination or the interview, and their separation rate was 25 percent. This low turnover rate may be due to the fact that many TJTC eligibles were not known to be eligible when hired and were discovered to be eligible up to a year after being hired. Some TJTC eligibles probably quit or were fired before they were discovered to be eligible (Bishop 1982, Chapter 2).

The impact of TJTC and OJT contracts was also examined in the 1982 employer survey by estimating fixed effects models that compared the productivity and turnover of 2 new hires at 500 of the sampled firms. Subsidy-eligible

workers who were known to be eligible when hired were not significantly different from the other workers hired for the same job. Only 36 of these firms had knowingly hired a subsidized worker for only 1 of the jobs, so these tests of subsidy programs impact are not very powerful. Point estimates, however, are very small: 1 to 2 percent lower productivity and about 2.5 percent greater training requirements. Subsidy eligibles were 17 percentage points more likely to quit (significant at $p = .063$ on a one-tail test) and 4.7 percentage points less likely to be fired (not significant). Overall, the individuals' expected lifetime at the firm was 20 percent lower. The higher turnover rate of subsidized workers seems, however, to be due to the higher turnover of CETA-OJT workers, and not to a higher turnover rate of those subsidized by TJTC. Using the full sample of new hires, the separation rate was 49 percent for OJT contracts (n=35), 24 percent for people known to be eligible for TJTC when hired (n=33), and 30 percent for unsubsidized new hires (n=3,106).

In the 1984 NCRVE survey of 100 firms that had hired only 1 TJTC eligible during 1980 and 1981, employers were asked, "Compared to other employees with the same amount of tenure in the same or very similar job, was/were the tax credit workers more or less productive?" The answers obtained were "the same" (55 percent), "more" (10 percent), and "less" (35 percent). When all these answers are averaged together, the TJTC workers were about 7 percent less productive than non-TJTC workers. Probably more significant were the reported differences in turnover. Over the course of a 2-year period, the quit rate was reported to be 41 percent for TJTC workers and 21 percent for others. The dismissal rate was reported to be 13 percent for TJTC workers, compared to 8 percent for others (Hollenbeck 1984a).

The evidence suggests that, in 1980 and probably in 1982 as well, CETA-OJT-subsidized new hires were less productive and had higher turnover rates than nonsubsidized workers at the same firm. Since OJT contracts subsidized employment for only six months, it should come as no surprise that turnover rates were extremely high. The evidence on TJTC, however, was mixed. When a random sample of firms were asked about specific individuals and the firm's TJTC hires were compared to other hires, there was no difference in productivity or turnover. When a special sample of firms that hired only one TJTC

eligible in 1980 and 1981 were asked in 1984 whether TJTC hires were less productive or had a higher turnover, however, differences were observed.

Why are there these differences between studies? The 1980 data on TJTC is not particularly reliable because many of the TJTC eligibles who were hired probably left the firm before they were discovered to be eligible. The 1982 data are free of this problem, but the sample is small. The 1984 data have the advantage of being more recent, but have the disadvantage of being unrepresentative of TJTC users. Clearly, it is made up solely of small users of TJTC. The fact that only one TJTC eligible per firm was hired in 1980-81 may indicate that the employers did not like the persons they hired, so the sample of firms probably does not reflect the average experience of all users.

8.3 Recommendations for Changes in the Structure of TJTC

The evidence on the cost-effectiveness of TJTC is mixed. Much can be done in the area of administration to improve participation rates, but most of the incremental changes in the legislated structure of TJTC that would raise participation rates would decrease cost-effectiveness. In our view, amendments to TJTC should concentrate on improving its cost-effectiveness (i.e., the tax subsidy cost of creating one full-time equivalent job). Lowering the rate of subsidy lowers costs and because the proportion of all certifications that represents a net addition to the number of jobs is not likely to decline proportionately with the decline in the subsidy, the cost-effectiveness of the program will increase. If TJTC is retained in basically its current form, the following amendments are recommended to improve its cost-effectiveness:

- The legal status of giving hiring preference to TJTC eligibles should be clarified. Language should be added that protects firms that are giving hiring preference to TJTC eligibles from civil suit by job applicants who do not get a job offer as a result. The fear of such suit has probably discouraged many firms from taking TJTC eligibility into account when they select from a pool of job applicants.
- The rate of the subsidy in the first year should be reduced to 25 percent. The rate of subsidy in the second year should be maintained at 25 percent to encourage retention of TJTC eligibles. A large subsidy is not required, because the administrative costs are small and the TJTC eligibles hired are either no less productive or only slightly less productive. Evidence that administrative costs are low is provided by the fact that the companies that

do this work charge only 15 percent of tax credit claimed. The 1980 and 1982 surveys found no or extremely small differences between the productivity and turnover of new hires who were known to be eligible for TJTC when hired and other workers at that firm. The costs of recruiting and selecting the worker were only slightly higher when a TJTC eligible was selected. The 1984 survey yields an estimate of 12 percent for the productivity and turnover penalty of hiring a TJTC eligible.[2] If the TJTC workers hired are only 12 percent less productive than other workers, the 50 percent subsidy rate would seem to be higher than necessary.

- The 50 percent subsidy rate should be maintained for the disabled and ex-offenders because these groups face particularly high barriers in finding jobs.
- The summer student tax credit should be reduced from 85 percent to 50 percent. The 85 percent subsidy rate has failed to produce respectable participation rates in the summer youth tax credit (Macro Systems 1984). Probably less than a third of the 33,538 summer youth certifications in FY 1983 resulted in a net addition of jobs for youth. If so each extra $1.00 of earnings generated by the program costs the Treasury $2.00 or more of lost revenue. The Summer Neighborhood Youth Corp is probably more cost-effective than an 85 percent tax credit for hiring disadvantaged youth during the summer.
- Consideration should be given to including up to $4,000 of training costs other than the time of the TJTC eligible in the subsidy base. To treat small employers fairly, the definition of training cost should include the time managers and coworkers spend giving informal training as well as the more easily measured formal training. To obtain the extra subsidy, the firm would have to give new hires a description of the planned training program at the time of hire and a certificate describing the competencies achieved (and staff time expended) when training is completed. These forms would encourage employers and employees to take the training more seriously, help TJTC eligibles get their next job, and serve as an audit trail. A more radical reform of TJTC would turn it into a training subsidy by limiting eligibility to jobs that offer some minimum amount of training and making the amount of wages that is subsidized depend on the time actually spent in training activities.

If increases in coverage and participation are desired, a number of changes in how eligibility is defined would be desirable, as follows:

- Consideration should be given to substituting a low-income unemployed senior citizen (over age 60 or 65) eligibility category for the Supplemental Security Income (SSI) eligibility category. Older people are particularly sensitive to the stigma of being on welfare. This is part of the reason why only 3,115 vouchers and 1,254 certifications were issued in the SSI category in FY 1983. Having a low income is not nearly as stigmatizing, so such a

change may increase utilization among the current SSI populations as well as extend coverage to other deserving individuals. This change would, of course, raise the government's costs of administering the program.

- Consideration should be given to substituting a low-income unemployed adult (over age 25) eligibility category for the AFDC, general assistance, SSI, ex-offender and Vietnam-era veteran eligibility categories. The stigma attached to being from a low-income family is less than that of being on welfare, so the program's popularity with employers may increase. This change may produce a significant increase in utilization (and therefore in costs).

8.4 Recommendations for Changes in the Administration of TJTC

Participation in TJTC could be considerably increased if the program were promoted more vigorously. If firms are approached in person, it should be possible to persuade a significant share of those approached to participate. To this end, we offer the following recommendations:

- It is essential that the integrity of the eligibility determination process be maintained. There is a danger that community based organizations that manage training programs serving TJTC eligibles, firms that hire eligibles and/or management assistance companies that serve as agents for employers will induce ineligible job seekers to falsify their application for a voucher. Our reading of the recent process analysis of TJTC (Macro 1985) suggests to us that in some states the eligibility determination process is not secure from abuse. SESAs should increase the frequency with which they audit income, family status, and whether a youth is supported by parents. Consideration should be given to ending telephone vouchering and tightening up the definition of whether the individual is supported by parents. Consideration should also be given to revising the applicant characteristics declaration so that the client is asked to write in the key facts about income and family status him or herself (rather than having a government official do it for them) and placing the warning about falsification in a more prominent place.

- Personal outreach is more effective than other forms of outreach. It is most effective when it simultaneously informs the firm about the program and offers eligible referrals that meet the firm's minimum requirements. Personal outreach must therefore be done by someone with access to a pool of eligibles who may be screened and referred to firms.

- Outreach must be increased and targeted on firms that may hire large numbers of TJTC eligibles. Administering agencies should also target firms that provide training to entry-level workers and offer career ladder opportunities.

- Local employment service offices should receive incentive payments when they certify a TJTC eligible.
- Employers who want to hire TJTC eligibles and give hiring preference to them should be encouraged to place a statement in their job application that indicates that they are seeking target group members.
- Local agencies should be discouraged from vouchering when a referral has not been arranged. Instead, they should focus on selling the program to firms and offering to refer TJTC eligibles to them.
- Employers must be informed by local agencies of the eligibility category of each individual. Ex-offenders make up only 5 percent of all TJTC vouchers. It is important that people in other eligibility categories be free of the stigma of being perceived as an ex-offender.
- At present, application for TJTC certification must be made on or before the day the new hire begins work. This feature of the program increases the probability that the selection of the new hire is positively influenced by TJTC. This feature increases cost-effectiveness and should be retained.
- Documentation of eligibility should be presented to the employment service no later than 15 days after a request for certification is made. This provision is designed to discourage employers from requesting certifications for everybody hired regardless of whether there is any prior indication of possible eligibility.

8.5 Recommendations for Changes in the Administration of Welfare Programs

The following recommendations are offered to improve the administration of welfare programs as they relate to the TJTC program:

- Agencies responsible for helping welfare recipients find employment should approach all large employers in the local labor market about TJTC and offer to make referrals of eligibles who have been screened to meet the firm's needs. If the firm's response to the explanation of the tax credit and the offer of eligible referrals is positive, referrals can be made. Disadvantaged workers who are referred need not even mention the tax credit and can concentrate on selling themselves. Expecting the job seeker to promote or explain the program is probably unwise.
- The disadvantaged worker's job search should not be limited to firms contacted by the welfare agency. Direct application should be made to other firms. At these firms, job-seeking welfare recipients should be discouraged from initiating a discussion of their eligibility for TJTC or welfare recipient status with prospective employers. Equal Employment Opportunity guidelines prevent employers from asking job applicants whether they are on welfare, so many recipients will be able to obtain jobs without their employer knowing they had been on welfare. If the employer

asks whether the applicant is eligible for TJTC, an affirmative answer should be given, but if the subject is not brought up by the employer, applicants should not mention their eligibility.

8.6 Alternatives to TJTC

Even if all the recommended changes in design and program administration are adopted, TJTC's low participation rate and uncertain cost-effectiveness will not disappear overnight. TJTC's underutilization problem may be inherent in its basic structure--providing a subsidy to employers for hiring stigmatized individuals. For this reason, two alternative methods of subsidizing the employment of the disadvantaged are discussed next.

The Wage Rate Subsidy

The wage rate subsidy is a supplementary payment to eligible individuals (not employers) that depends linearly on the number of hours worked. The hourly supplement to the wage is generally defined as some fraction (e.g., 50 percent) of the difference between a target wage (e.g., $6.00 per hour) and the individual's actual wage, and thus phases out as the individual obtains a higher wage. Eligibility could be limited to certain target groups and, if desired, the level of the target wage could be made to depend upon demographic characteristics of the worker (e.g., family size). If eligibility were limited to adult heads of household and the target wage were varied by family size, such a scheme will be more target-efficient than welfare or a negative income tax (Betson and Bishop, 1982).

Such a scheme increases employment by inducing eligibles to search harder for employment, inducing them to accept lower-wage job offers, and reducing the propensity to quit a job. Lerman (1982) and Johnson (1982) have shown that when participation is not universal and the unemployment of the target group is due to the high marginal tax rates in welfare programs, unemployment insurance, or the availability of other sources of income (e.g., from hustling or dealing), a wage subsidy paid to the worker has a much larger impact on legal employment than a subsidy paid to employers. When unemployment is due to the minimum wage and other wage rigidities, the reverse is true.

The debate over the source of the high unemployment rates of the disadvantaged has been raging for many years. Evidence for the proposition that

the minimum wage is the prime culprit is found in the dramatic increases in the employment rates of black youth when and where CETA was creating hundreds of thousands of jobs, as well as in the large numbers of people who apply for minimum wage jobs. Evidence that the minimum wage is having only a small impact comes from May current population survey data suggesting widespread violations of the law, as well as from Brown et al.'s (1983) review of the time series studies of its impact.

One of the important advantages of the wage rate subsidy is that it can be paid directly to the individual. Consequently, if eligibility is categorical and based upon some stigmatizing characteristic (e.g., welfare recipiency), the employers need not know which of their employees is receiving a wage supplement. Alternatively it can be made a normal part of tax withholding if eligibility and target wage rates are based on demographic characteristics that are known to the employer.

In 1980, an experiment (Friedman and Lerman 1983; Rivera-Casale et al. 1982) was conducted in Wilkes Barre, Pennsylvania to test a $1.00/hour wage subsidy for disadvantaged youth. The randomly assigned treatment members were significantly more likely to find and keep jobs than those in the unsubsidized control group.

A Subsidy of Increases in Employment

Policies that can achieve the twin objectives of stimulating employment while simultaneously reducing inflation must significantly lower the marginal costs of the firm's expansion and maintain this reduction in marginal costs for a considerable period of time. In competitive markets, a reduction in marginal costs is equivalent to an outward shift of the supply curve, and this inevitably results in more real output, more jobs, and lower prices. In markets characterized by some degree of monopoly, a reduction in marginal costs that can be relied upon to last will induce the firm to lower its selling price and compete more aggressively. Here again, the result is more jobs, more output, and lower prices. The stimulus to employment will, of course, be greatest if the subsidy of marginal costs is limited to employment costs.

Well-designed, private-sector employment subsidies of expansions in the employment and training of unskilled and young workers are an effective means of reducing unemployment without reaccelerating inflation. A number of

studies have concluded that employment can be increased and aggregate unemployment decreased by shifting employment demand from skilled labor markets to unskilled labor markets. Two empirical studies (Baily and Tobin 1978; Nichols 1982) have found that the unemployment rates in skilled labor markets have a significantly larger impact on aggregate wage inflation than unemployment rates in unskilled labor markets. Studies (Bishop 1979; Johnson 1982) that have examined the impact of wage subsidies in a general equilibrium framework have found that, because of the minimum wage, and transfer programs and high-wage elasticities of labor supply by teenagers, women, and low-wage workers generally, a wage subsidy of unskilled labor will increase their employment without significantly reducing the employment of skilled workers even if the skilled workers, are taxed to provide the subsidy.

The revenue costs of a significant reduction in the costs of increasing employment can be minimized by setting a threshold (e.g., the firm's Federal Unemployment Insurance tax base, or aggregate hours worked by all employed in the firm) and subsidizing increases in that index of employment. A subsidy of employment above a threshold is preferred over subsidizing new hires, because many firms have turnover rates of 50 to 100 percent. Subsidizing new hires quickly results in subsidizing the firm's entire work force. The use of either the Federal Unemployment Insurance tax base (as was done with the New Job Tax Credit in 1977 and 1978) or hours worked as the basis for subsidy would concentrate the subsidy on the lowest-skill jobs--exactly the segment of the labor market where labor surpluses are greatest. Such a focus is desirable because a general expansion of the economy will quickly produce shortages in certain skilled occupations and the competitive bidding for the limited number of people with needed skills that will rekindle inflation.

The subsidy could be even more strongly focused on the least-skilled by having a provision that reduces the subsidy if the firm's average wage in 1985 exceeds its 1984 wage by more than some standard amount (e.g., 5 percent). Such a provision would have the further beneficial effect of putting direct downward pressure on wage inflation. Our experience with the New Job Tax Credit (NJTC) suggests that a marginal wage subsidy of that type may promote wage inflation. This tendency can be forestalled, however, by reducing the potential tax credits of a firm if its wage increases exceed some wage increase standard. Such a subsidy can be very simple to administer. To

calculate its subsidy, the firm would need four numbers: (1) total wage bill this year and (2) in the base year, and (3) total hours worked this year and (4) in the base year.

How such a scheme would work is most easily understood by examining a specific proposal. (The parameters of this proposal are illustrative.) Firms and nonprofit entities would receive a tax credit against Social Security taxes of $1.00/hour for every hour by which total hours worked (including those worked by salaried management) at the firm in 1985 exceed total hours worked in 1984. A tax credit would also be provided in 1986 for increases in total hours worked over the higher of 1985 or 1984's hours worked. In 1987, the tax credit would be for increases in total hours worked over the highest of 1986, 1985, or 1984 hours worked. The tax credit would be reduced if the firm's average wage (calculated by dividing total compensation by total hours worked) in 1985 was more than 5 percent greater than its 1984 wage. The threshold for the wage increase "take back" might be 10 percent in 1986 and 15 percent in 1987.

A general formula for the tax credit is as follows:

$$TC = s \sum_i H_{i_t} - u \sum_i (W_{i_t} - gW_o)H_{i_t}$$

subject to the constraint that $TC \geq 0$ and $\sum_i (W_{i_t} - gW_o)H_{i_t} \geq 0$

where

H_{i_t} = hours worked by people in the i^{th} job during time period t;
H_{i_t} = growth of employment in the i^{th} job above the threshold;
W_{i_t} = hourly wage rate of the i^{th} job in time period t;
W_o = the firm's average wage in the base period;
s = hourly tax credit;
g = wage growth standard, $g > 1$;
u = take back rate.

An increase in the wage rate is taxed at the rate u. This discourages wage increases above the standard. An expansion of hours that leaves the composition of employment unchanged is subsidized at the rate of s dollars per hour.

Where expansions are not proportional and the firm is in the take back region, the tax benefit depends upon the wage rate of the jobs that are expanded, as follows:

$$\frac{dTC}{dH} = s - u(W_{i_t} - gW_o)$$

If, for instance, s = \$1.00/hour, u = .1, and gWo = \$8.00/hour, offering an additional job paying \$4.00/hour would generate a tax credit of \$1.40/hour, expanding a job paying \$12.00 would generate a credit of \$0.60/hour, and expanding a job paying \$18.00/hour would generate no credit.

This type of a marginal employment subsidy has a number of attractive features, as follows:

- Firms are encouraged to increase employment by hiring inexperienced workers and training them, rather than by increasing overtime work or bidding experienced workers away from other firms by raising wages.
- Within each firm, it tends to target the employment stimulus on the least-skilled workers. (This occurs because hiring extra low-wage workers lowers the average wage of the firm, and this helps the firm meet the 6 percent wage increase standard.) The increase in demand at the unskilled end of the labor market should produce large reductions in the unemployment of youth and the disadvantaged.
- Targeting on less-skilled workers is accomplished without giving low-wage firms a proportionately larger subsidy.
- Firms are encouraged to slow the rate at which they increase wage rates.
- Both marginal and average costs of production are reduced, while simultaneously taxing, wage increases above the standard. Penalty tax-incentive-based income policies (TIPs), in contrast, have the disadvantage of raising marginal and average costs and, therefore, prices of firms that violate the wage standard (Dildine and Sunley 1978; Seidman 1978).
- The expected revenue cost may be lowered or raised by judicious adjustments of the subsidy rate, the take back rate, the employment threshold, and wage growth standard.
- If concern about the deficit makes revenue-losing schemes undesirable, the scheme can become a revenue raiser by raising the threshold of the employment subsidy, lowering the hourly rate of subsidy, lowering the wage growth standard, raising the tax rate on wage increases, and/or dropping the requirement that TC $\geq$ 0.

Note that the subsidy component lowers price inflation and the wage increase "take back" lowers wage inflation, so if they are kept in the proper relationship to each other, the scheme will be neutral with respect to factor shares.

A marginal subsidy called the New Jobs Tax Credit (NJTC), with some of the features described earlier, was in operation during 1977 and 1978 in the United States. The contrasts between NJTC and programs targeted on specific types of individuals are dramatic. In 1978, 1.1 million firms (more than 30 percent of the nation's firms and more than half of eligible firms), received a New Jobs Tax Credit (NJTC). In 1979, fewer than 25,000 companies received a TJTC and fewer than 10,000 received a WIN tax credit. In 1981, TJTC participation had increased to only about 100,000 companies.

The NJTC seems to have had major impacts upon the economy. In its 2 years of operation, the NJTC subsidized more than 4 million person-years of employment. All three studies of NJTC have found that it increased employment. The NFIB study (McKevitt 1978) estimate 300,000 extra jobs by the summer of 1978; the Perloff and Wachter study (1980) implied an increase of 700,000 jobs in 1977; and the Bishop (1981) study estimated 150,000 to 670,000 extra jobs by summer of 1978 in construction and distribution alone. Bishop's study (1981) found that reductions in the margin between retail and manufacturer's wholesale prices induced by NJTC saved consumers between $3.8 and $7 billion.

The lesson of our recent experience with employment subsidies is that a subsidy of private-sector employment will reach a scale and cost-efficiency sufficient to make a real dent in structural unemployment, only if the following occur:

- Employers are able to simply certify their own eligibility.
- The behavioral response desired of employers is obvious and simple for them to implement.
- All or almost all employers are eligible (otherwise, the result is a redistribution of who employs whom) (Perloff 1982).
- Targeting is essential. It is important to exclude workers who do not need the help, but it is also important to include all workers in need of help. Subsidizing the employment of some but not all disadvantaged workers may result in those eligible for subsidy displacing equally disadvantaged workers who are not eligible for subsidy. Overly inclusive definitions of the target group will reduce the cost-effectiveness of the program in helping the "truly needy" (Johnson 1982; Perloff 1982).

- The target group is defined by a nonstigmatizing criterion that is visible to the employer (a characteristic of the job, such as wage rate, is better than characteristics of the worker).

- It is marginal—paying for increases in employment above a threshold, such as done by NJTC. This feature raises the cost-effectiveness of the wage subsidy. Thresholds should either be fixed, updated by statistics the firm does not influence, or updated on the basis of peak employment levels (Bishop and Wilson 1982).

NOTES

1. Given the great amount of television advertising about TJTC, it is surprising that the respondents in 23 percent of all establishments reported not having even "heard" of TJTC. In addition it was mentioned in one of the 70 questions in the 1980 NCRVE employer survey. Clearly, information that is not used is often quickly forgotten.

2. The monthly turnover rates implied by the 1984 survey were 3.2 percent for TJTC eligibles and 1.46 percent for other workers in the same or similar jobs. The turnover differential is 1.74 percent per month. The 1982 employer survey provides an estimate of the magnitude of training investments during the first quarter of employment: 1.5 months of potential productivity. Assuming that separations follow the month's training investment, the average loss of training investment associated with knowingly hiring a TJTC eligible is 1.79 percent of a month's potential productivity during the first 3 months, and 5.22 percent by the end of the year (assuming total investment in training is about 25 percent of the 1 year's potential productivity). Combined with the 7 percent productivity differential, we have a total penalty of 12 percent.

APPENDIX A

A BRIEF DESCRIPTION OF THE FIRST WAVE OF THE EMPLOYER SURVEY

A BRIEF DESCRIPTION OF THE FIRST WAVE OF THE EMPLOYER SURVEY

WESTAT, Inc. of Rockville, Maryland was the survey contractor. They obtained completed interviews with 5,859 employers. Of these, about 486 were with private employers who had a CETA-OJT contract during 1978 or 1979, 33 with taxi companies and 5,340 with employers selected randomly from ES202 or Dun and Bradstreet Market Identifier Files (DMI) lists. Interview time ranged from less than 20 minutes for firms with very few employees to 2 hours or more for firms with multiple establishments and several hundred employees. A screener and a main questionnaire were used for all interviews. If the employer requested more information on the survey, a questionnaire explanation and worksheet were mailed to the employer. The interview was then conducted over the telephone after receipt of the materials. For large and medium-sized firms, there were normally two or three respondents per firm. Small firms generally had one respondent.

Table A-1 lists the sites and response rates obtained in each site. Overall, refusal rates were very low for this type of study. However, the sites located in Ohio and Louisiana stand out as exceptions to the rule. The refusal rates for these sites range from 2 percent to over 11 percent above the average for all sites. Also, the number of max-call cases is somewhat higher in these sites. We suspect that some of these cases may have been "avoidance" cases--that is, cases in which the respondents had no intention of completing the interview but felt that if they put the interview off long enough, the interviewer would stop calling and they would not be forced to refuse outright.

Sample Design of the Employer Survey

The Probability Sample

The primary sample frames for the employers survey consisted of lists of business units that, in compliance with the requirements of state unemployment insurance laws, file quarterly reports on employment with state employment security agencies--the ES202 lists. These reports were expected to provide a virtual census of the workers of private nonagricultural employers, and are the benchmark upon which National Income Account estimates of employment and compensation are based. Since the law requires that newly formed businesses file for an employer identification number before the end of the quarter in which they hire their first employee, the lists were expected to be quite up-to-date. The ES202 listings of employers contain the four-digit SIC code and a count of the number of employees in the first quarter of 1979 for each reporting unit.

State laws regarding the confidentiality of the ES202 list in Kentucky, Alabama, and Ohio necessitated using alternative sampling frames in these states--the (DMI). Although not quite as comprehensive nor as up-to-date as the ES202 list, the DMI does provide the information necessary to replicate the sample selection procedures based on employment and SIC code planned for

TABLE A-1

Site[1]	Number Completes	Completion[2] Rate	Refusal[3] Rate	Response[4] Rate
Alabama				
Mobile	358	58.7	21.1	75.4
Birmingham	220	56.8	20.0	73.3
Pensacola, FL	142	52.8	19.8	75.5
Kentucky				
Pike	232	59.2	11.1	86.6
Buchanan/Dickenson, VA	121	56.3	9.0	89.0
Harlan	103	61.3	7.2	86.5
Louisiana				
Baton Rouge	337	48.1	26.7	67.8
Beaumont/Port Arthur, TX	178	49.2	21.6	72.3
Lake Charles/Lafayette	157	55.9	20.3	75.8
Missouri				
Central Missouri	279	58.7	13.3	83.5
Southeast Missouri	150	59.8	9.6	87.7
Northwest Missouri	132	66.3	10.8	88.0
Ohio				
Columbus	420	52.9	25.1	69.4
Toledo	205	55.7	25.2	70.7
Cincinnati	235	49.3	26.1	67.3
Texas				
Corpus Christi	343	52.4	20.2	73.8
San Antonio	227	51.8	19.8	73.0
New Orleans, LA	176	39.7	29.6	63.1
Washington				
Southwest Washington	294	54.8	1.20	82.8
Skagit/Watcom	155	63.5	12.4	83.8
Olympia Peninsula	114	49.1	23.5	73.1
Colorado[5]				
Weld	112	36.0	1.8	97.4
Alamosa	58	37.9	--	100.0
Logan/El Paso	60	36.1	6.2	93.7
Wisconsin[5]				
Marathon	142	45.9	4.0	95.9
Outagamie	61	31.8	4.7	95.3
Winnebago	57	33.1	8.1	91.9
TOTALS	5,068	51.7	18.5	76.5

[1]Under heading, site listed first is Pilot; site listed second is Household Control; site listed third is Employer Control.

[2]Completion Rate = (# of Completes + # Partial Completes) Total # of Finalizations.

[3]Refusal Rate = # of Refusals (# of Complete + # of Partial Completes + # of Refusals).

[4]Response Rate = (# of Completes + # of Partial Completes) (# of Completes + # of Partial Completes + # of Refusals + (Max-Calls x 67%)).

[5]For budgetary reasons these regions were eliminated from the sample midway through the interviewing period.

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the ES202 frame and, therefore, fills the gaps in our ES202 listings quite well.

The industrial universe represented by the employer survey included all nonagricultural for-profit employers that have unemployment insurance accounts. Agriculture, forestry, and fisheries (SIC Code 00-09) were excluded because of the poor coverage of these industries in the ES202 files. Also excluded were government and government enterprises (SIC Codes 43, 90-99) and nonprofit organizations (SIC Codes 821, 822, 823, 84, and 86). Since government and nonprofit organizations are not limited to these SIC codes, an initial screening determined whether the organization contacted was nonprofit or governmental, and the interview was terminated if it was. The ES202 and DMI lists of employers were also checked against other employer lists—membership lists of the local chamber of commerce, lists of local manufacturers--and with the local CETA prime sponsor to ensure that no really large local employers were inadvertently left out of the sample frame.

The Supplementary Sample of Employers with CETA OJT Contracts

Only a tiny proportion of the employers in a labor market negotiate and sign OJT contracts with CETA. Consequently, a random sample of 6,000 employers was expected to yield only about 200 who had OJT contracts with CETA. An analysis of employers' decisions requires many more observations than that. Therefore, a supplementary sample of approximately 490 employers who had CETA OJT contracts in 1978 or 1979 was drawn to provide additional observations on this class of employers. The program records of the CETA prime sponsors in pilot and control sites were the source of the list of OJT contractors from which this sample was drawn.

Geographic Coverage of the Employer Survey

The employer survey was conducted in 28 sites dispersed around the nation. Ten of the sites were selected because the U.S. Department of Labor was running a major social experiment, the Employment Opportunity Pilot Projects (EOPP), in these labor markets. Eighteen other locations were selected to form a control group for planned studies of the impact of EOPP. Both rural and urban, Northern and Southern employers are represented. Although the sites were not randomly selected, the local economies that were included seem to represent the nation. They range from an Appalachian coal community to a Pacific Northwest logging area, and from a Midwestern industrial center (Columbus) to Corpus Christi, a center of the oil and petrochemical industries. Table A-2 lists the counties that were included in each site and the total private nonagricultural employment of each site.

Selection of the sample

Stratified random samples of unemployment insurance tax filing units were drawn from the ES202 lists. Where the ES202 lists were unavailable (i.e.,

Kentucky, Alabama, and Ohio), stratified random samples of establishments were drawn from the Dun and Bradstreet Market Identifier File. The sampling procedure for selecting the employers involved the following steps:

1. A sampling measure of size was assigned to each employer in the frame, based upon the estimated number of low-wage workers. These measures of size, Z_j, were computed from the following formula:

   $$Z_j = [w_i\ (1 + \text{employment}_j)]^{0.8}$$

   where w_i is an estimate of the proportion of "low-wage" employees in the "i"th industry, based upon tabulations of the 1970 Census Public Use Tapes for the 10 initially defined pilot sites. In order to ensure enough observations for a study of the impact of EOPP on out-contracting to low-wage employers, the Z_j for four industries was tripled (SIC 7349, 7362, 7393, 5963).

2. Multiunit employers within the same site who had the same identification (account) number were consolidated into a single record, which was then assigned the measure of size.

3. The certainty class, employers for which $P_j \geq 1$, was determined in accordance with the assumption that the dropout rate in this class would be approximately one-half. (The errors of this assumption will have little effect. They will shift only a few employers, who in any case would have large probabilities of selection into or out of the certainty class.)

4. The noncertainty sample was selected by arranging the balance of the frame in order of size, assigning all employers who reported zero employment to a single stratum, dividing the remaining employers in the array into six strata (each having about the same aggregate size), and choosing (with equal probability) about four times the desired number of completed interviews. The order of the selected establishments was then randomized across all strata.

   In conducting the canvass, the selected employers who were out of business or who were inaccessible because of bad addresses were deleted by an advance screening operation. Interviews were then attempted for all the remaining certainty employers. For the noncertainty sample, however, interviews were attempted for the first n_h employers in the randomly sorted list, where n_h is the desired number of completed interviews for the site.

5. Because the units listed in ES202 were not expected always to correspond to single-location establishments, all selected unit were asked whether they operated at more than one location within the target area. Those that did were requested to submit a single report covering all of their locations in the site, if feasible. However, where only separate reports would be obtained, a subsample of establishments was selected and the sampling weights adjusted accordingly to reflect the correct probabilities of selection.

TABLE A-2

GEOGRAPHIC COVERAGE OF EMPLOYER SURVEY

Site	Pilot/ Control	Total Private Employment in Site	Counties
Alabama			
Mobile	P	115,738	Baldwin, Escambia, Mobile Co.
Birmingham	C	271,202	Jefferson, Shelby, Walker Co.
Pensacola	C	77,684	Escambia, Okaloosa, Santa Rosa Co.
Colorado			
Weld County	P	25,207	Weld County
Alamosa County	C	20,000	Alamosa County
Logan, El Paso County	C	37,348	Logan, El Paso Co.
Kentucky			
Pike County	P	15,645	Pike County
Buchanan, Dickenson Co.	C	14,861	Buchanan, Dickenson Co.
Harlan County	C	8,382	Harlan County
Louisiana			
Baton Rouge	P	104,299	East Baton Rouge Parish
Beaumont-Port Arthur	C	114,064	Hardin, Jefferson, Orange Co.
Lake Charles	C	87,457	Calcasieu Parish, Lafayette Parish
Missouri			
Central Missouri	P	30,067	Carroll, Charlton, Johnson, Lafayette, Pettis, Saline Co.
Southeast Missouri	C	38,165	Bollinger, Cape Girardeau, Iron, Perry, St. Francois, Ste. Genevieve Co.
Northwest Missouri	C	39,847	Buchanan, Caldwell, Clinton, Daviess, Grundy, Livingston Co.
Ohio			
Columbus	P	303,325	Franklin County
Cincinnati	P	402,091	Hamilton County
Toledo	C	171,451	Lucas County
Dayton	C	250,000	Montgomery County
Texas			
Corpus Christi	P	103,532	Aransas, Bee, Brooks, Duval, Jim Wells, Kenedy, Kleberg, Live Oak, McMullen, Nueces, San Patricio Co.
San Antonio	C	288,855	Bexar, Comal, DeWitt, Gonzalez, Guadalupe, Karnes, Victoria, Wilson Co.
New Orleans	C	211,892	Orleans Parish
Washington			
Southwest Washington	P	43,216	Cowlitz, Grays Harbor, Pacific, Wahkiakum Co.
Skagit, Whatcom County	C	36,959	Skagit, Whatcom Co.
Olympia Peninsula	C	20,453	Jefferson, Lewis, Mason, Skamania Co.
Wisconsin			
Marathon County	P	30,978	Marathon County
Outagamie County	C	43,113	Outagamie County
Winnebago County	C	45,313	Winnebago County

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APPENDIX B

EMPLOYER SURVEY QUESTIONNAIRE

PART C: GOVERNMENT PROGRAMS

301. Have you heard that federal tax credits are available to employers who hire certain types of workers. These programs are usually called Targeted Job Tax Credits or TJTC, and Work Incentive tax credit or WIN. 21

Yes..... (ASK 302)..... 1
No.....(GO TO 340).. 2
DK.....(ASK 302)..... 8
NA.....(ASK 302)..... 9
(Q.340 IS ON PAGE 50)

302. Have you or any of your staff spoken to a representative of government, a trade association, or a local business organization about these tax credits? 22

Yes..... (ASK 303).... 1
No.....(GO TO 305). 2
DK.....(GO TO 305). 8
NA.....(GO TO 305). 9

303. In what month and year was your initial contact about tax credits? (IF DK PROBE: What is your best guess.) 23-28

__ __ 1 9 __ __
MONTH YEAR
DK.....989998
NA.....999999

304. Was the initial conversation about tax credits initiated by (READ LIST) (ALLOW ONLY ONE RESPONSE, IF MORE THAN ONE PROBE FOR FIRST CONVERSATION.) 29

You?..... 1
Your staff or company?.2
By Government?..... 3
A Trade association?.... 4
A local business organization?..... 5
Or something else..... 6
DK..... 8
NA..... 9

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305. Do you think tax-credit-eligible people would usually make better or poorer new employees than people who are not tax-credit-eligible?

Better..... 1
Poorer..... 2
NO DIFFERENCE.....3
DK..... 8
NA..... 9

30

306A. Does your company try to identify and certify tax-credit-eligible employees that have already been hired?

Yes...(ASK 306B)..... 1
No...(GO TO 307)..... 2 *
DK...(ASK 306B)..... 8
NA...(ASK 306B)..... 9

31

306B. Does your company make an effort to select new employees that are tax-credit eligible?

Yes...(GO TO 308)..... 1
No...(ASK 307)..... 2 *
DK...(GO TO 308)..... 8
NA...(GO TO 308)..... 9

32

IF "NO" TO 306A* AND 306B* ASK Q. 307.
ALL OTHERS GO TO 308.

307. In other words, your company has never hired any tax credit eligible employees. Is that correct?

Never hired...(GO TO 333)...1
Have hired...(ASK 308). ...2
DK...(GO TO 333)...8
NA...(GO TO 333)...9

33

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34-38-61

308. What has your company done in the past 3 years to determine if any new employees were eligible for tax credits. (DO NOT READ LIST, WRITE VERBATIM, CODE IF CLEAR, PROBE: What other reasons? Can you be more specific?)

_____ 39-40

_____ 41-42

_____ 43-44

_____

	First Mention	Second Mention	Third Mention
Tried to get more information on tax credit programs (general).....	10	10	10
Called employment service for information.....	11	11	11
Called another government agency for information.....	12	12	12
Efforts made prior to hiring (general)..	20	20	20
Checked job application for eligibility.....	21	21	21
Made assessment of eligibility during the interview.....	22	22	22
Revised job application to obtain necessary information.....	23	23	23
Sent applicant to employment service before hiring.....	24	24	24
Asked applicants if they had characteristics that made them eligible.....	25	25	25
Job applicant told company he or she was eligible.....	26	26	26
Asked employment service to refer eligibles	27	27	27
Asked other agencies to refer eligibles.....	28	28	28
Other efforts prior to hiring _____	29	29	29
Efforts made after hiring (general).....	40	40	40
Company made assessment after hiring..	41	41	41
Company sent new employee to job service after hiring.....	42	42	42
Employment service came and checked employees.....	43	43	43
Company hired a firm to check employees.....	44	44	44
Other _____	96	96	96
Nothing.....	97	97	97
DK.....	98	98	98
NA.....	99	99	99

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309. Recently the law was changed. Under current law, companies are able to obtain a tax credit for hiring eligible individuals only if the company applies for certification of the employee before that person starts work. In what month and year did you learn of this change in the law?

45-50

__ __ 1 9 __ __
MONTH YEAR
Now/Didn't know...999997
DK..... 989998
NA..... 999999

309A. READ STATEMENT: This change in the rules became effective in September 1981. The following two sections ask separate questions about your experiences with the programs before and after September 1981.

310. Between January 1980 and September 1981, how many new employees did your company hire that were eligible for a Targeted Job Tax Credits, TJTC, or Work Incentive, WIN, tax credit?

51-54

One..... (ASK 311)... 0001
(GO TO 317) __ __ __ __
RECORD NUMBER
Some, DK#
(GO TO 317)..... 9996
None (GO TO 324). 9997
DK (GO TO 324). 9998
NA (GO TO 324). 9999

311. In which year did you hire this worker: in 1980 or during the first 9 months of 1981?

55

1980..... 1
1981..... 2
DK..... 8
NA..... 9

312. Did you apply for the tax credit by obtaining certification of the new employee's eligibility?

56

Yes..... (GO TO 314)... 1
No.....(ASK 313).... 2
DK.....(GO TO 314).. 8
NA.....(GO TO 314).. 9

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313. Why didn't you apply for the tax credit? (DO NOT READ LIST, RECORD VERBATIM, CODE IF CLEAR, PROBE: What other reasons? Can you be more specific?)

_____ 57-58

_____ 59-60

_____ 61-62

_____

	First Mention	Second Mention	Third Mention
Administrative/Structural Reasons (General)	10	10	10
Deadline for applying past	11	11	11
Employee left before being certified	12	12	12
Employee did not stay with firm for required length of time to be certified	13	13	13
Lack of knowledge/Don't know how	14	14	14
Not eligible for other reasons	15	15	15
Other Administration _____	16	16	16
Benefits did not outweigh costs (General)	20	20	20
Tax benefit too small	21	21	21
Paperwork too great	22	22	22
Other_____	23	23	23
Worker ability (General)	30	30	30
Worker is so good tax credits not needed	31	31	31
Other_____	32	32	32
Don't need tax credit (General)	40	40	40
Not needed because company has no tax liability	41	41	41
Other_____	42	42	42
Don't want to get involved with government (General)	50	50	50
Might result in interference by government	51	51	51
Other_____	52	52	52
Don't believe it is right to take government/tax money	60	60	60
Other (General)_____	80	80	80
DK	98	98	98
NA	99	99	99

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314. When you hired this eligible employee did you know or think he or she might be eligible for a tax credit program?

Yes (ASK 315)..... 1
No (GO TO 316)..... 2
DK (GO TO 316)..... 8
NA (GO TO 316)..... 9

63

315. How much did this possibility of eligibiltiy increase the the applicant's chance of being hired (READ LIST)..

A great amount..... 1
A moderate amount..... 2
Not very much, or..... 3
Not at all..... 4
DK..... 8
NA..... 9

64

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316. How did you learn the worker was eligible? (DON'T READ LIST, RECORD VERBATIM, CODE IF CLEAR, PROBE: What other reasons?/ Can you be more specific?)

_____ 65-66

_____ 67-68

_____ 69-70

_____

	First Mention	Second Mention	Third Mention
Applicant told company	10	10	10
Referral agency told told company (general)	20	20	20
Employment service that referred worker	21	21	21
High school that referred worker	22	22	22
Welfare office	23	23	23
CETA agency that referred worker	24	24	24
Other referral _____ _____	25	25	25
Sent applicant to employment service to determine eligibility	30	30	30
A company we hired determined eligibility	40	40	40
Respondent or staff determined eligibility	50	50	50
Employment service came and checked workers	60	60	60
Other _____	80	80	80
DK	98	98	98
NA	99	99	99

GO TO Q.327 GO TO Q.327 GO TO Q.327 (PAGE 46)

71-78 bl

79 = 1

80 = 3

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C.14
1 = b1
New I.D.:2-5

317. How many of these eligible employees were hired in the first 9 months of 1981?

(ASK 318) ___, ___ ___ ___ 6-9
RECORD NUMBER

Some, DK# (ASK 318). 9996
None (GO TO 324).... 9997
DK (ASK 318)..... 9998
NA (ASK 318)..... 9999
(Q.324 IS ON P.44)

318. How many of the tax credit eligible employees hired between January 1980 and September 1981 were not or will not be claimed for a tax credit?

(ASK 319) ___ ___ ___ ___ 10-13
RECORD NUMBER

Some, DK# (ASK 319). 9996
None (GO TO 320).... 9997
DK (GO TO 320)..... 9998
NA (GO TO 320)... 9999

319. Why didn't you apply for the tax credit for these eligible employees? (DO NOT READ LIST, RECORD VERBATIM; CODE IF CLEAR; PROBE: What other reasons?/Can you be more specific?)

_____ 14-15

_____ 16-17

_____ 18-19

_____

_____

	First Mention	Second Mention	Third Mention
Administrative/Structural Reasons (General)	10	10	10
Deadline for applying past	11	11	11
Employee left before being certified	12	12	12
Employee did not stay with firm for required length of time to be certified	13	13	13
Lack of knowledge/Don't know how	14	14	14
Not eligible for other reasons	15	15	15
Other Administration _____	16	16	16
Benefits did not outweigh costs (General)	20	20	20
Tax benefit too small	21	21	21
Paperwork too great	22	22	22
Other_____	23	23	23
Worker ability (General)	30	30	30
Worker is so good tax credits not needed	31	31	31
Other_____	32	32	32
Don't need tax credit (General)	40	40	40
Not needed because company has no tax liability	41	41	41
Other_____	42	42	42
Don't want to get involved with govern't (General)	50	50	50
Might result in interference by government	51	51	51
Other_____	52	52	52
Don't beleive it is right to take government/tax money	60	60	60
Other (General)_____	80	80	80
DK	98	98	98
NA	99	99	99

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320. How many of these employees did you know or think might be eligible before you hired them?

(ASK 321) ___ ___ ___ ___ 20-23
RECORD NUMBER

Some, DK#
(ASK 321)..... 9995

All of them
(GO TO 322)..... 9996

None
(ASK 321)..... 9997

DK (GO TO 322).. 9998

NA (CO TO 322).. 9999

321. Of those you did not know were eligible when you hired them, how did you later learn they were eligible? (DO NOT READ LIST, RECORD VERBATIM, CODE IF CLEAR, PROBE: What other reasons? / Can you be more specific?)

_____ 24-25

_____ 26-27

_____ 28-29

_____

	First Mention	Second Mention	Third Mention
Applicant told company	10	10	10
Referral agency told company (general)	20	20	20
Employment service that referred worker	21	21	21
High school that referred worker	22	22	22
Welfare office	23	23	23
CETA agency that referred worker	24	24	24
Other referral _____ _____	25	25	25
Sent applicant to employment service to determine eligibility	30	30	30
A company we hired determined eligibility	40	40	40
Respondent or staff determined eligibility	50	50	50
Employment service came and checked workers	60	60	60
Other _____	70	70	70
DK	98	98	98
NA	99	99	99

IF NONE IN 320, GO TO 324.

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322. Of those you knew or thought were eligible when you hired them, how did you learn of their eligiblity (DO NOT READ LIST. RECORD VERBATIM. CODE IF CLEAR. PROBE: What other reasons?/Can you be more specific?)

_____ *30-31*

_____ *32-33*

_____ *34-35*

_____

	First Mention	Second Mention	Third Mention
Applicant told company	10	10	10
Referral agency told company (general)	20	20	20
Employment service that referred worker	21	21	21
High school that referred worker	22	22	22
Welfare office	23	23	23
CETA agency that referred worker	24	24	24
Other referral_____ _____	25	25	25
Sent applicant to employment service To determine eligibility	30	30	30
A company we hired determined eligibility	40	40	40
Respondent or staff determined eligibility	50	50	50
Employment service came and checked workers	60	60	60
Other_____	80	80	80
DK	98	98	98
NA	99	99	99

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323. How much did this possibility of eligibility increase the applicants' chance of being hired (READ LIST)...

A great amount..... 1
A moderate amount..... 2
Not very much, or..... 3
Not at all..... 4
DK..... 8
NA..... 9

36

324. Next I am going to ask you a series of questions about the period between October 1981 and today. During this period, how many of your new hires were <u>certified</u> as eligible for Targeted Job Tax Credit , TJTC, or Work Incentive, WIN, tax credit?

(ASK 325) ___ ___ ___
RECORD NUMBER
Some, DK#
(ASK 325)..... 996
None..(GO TO 326).... 997
DK..(GO TO 326)..... 998
NA..(GO TO 326)..... 999

37-39

325. How did you learn that these new employees might be eligible for tax credits? (DO NOT READ LIST; RECORD VERBATIM. CODE IF CLEAR. PROBE: What other reasons?/ Can you be more specific?)

_____ *40-41*

_____ *42-43*

_____ *44-45*

_____

	First Mention	Second Mention	Third Mention
Applicant told company	10	10	10
Referral agency told told company (general)	20	20	20
Employment service that referred worker	21	21	21
High school that referred worker	22	22	22
Welfare office	23	23	23
CETA agency that referred worker	24	24	24
Other referral _____ _____	25	25	25
Sent applicant to employment service to determine eligibility	30	30	30
A company we hired determined eligibility	40	40	40
Respondent or staff determined eligibility	50	50	50
Employment service came and checked workers	60	60	60
Other _____	80	80	80
DK	98	98	98
NA	99	99	99

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326. How many requests for tax credit certifications do you have pending?

— — — 46-48
RECORD NUMBER
Some, DK#..... 996
None..... 997
DK..... 998
NA..... 999

327. Since September 1981 has the requirement that an application for certification be made simultaneously with hiring the worker prevented you from obtaining certification of an otherwise eligible new hire?

Yes.... (ASK 328)..... 1 49
No..... (GO TO 332A)... 2
DK. (GO TO 332A).. 8
NA. GO TO 332A)... 9

328. For how many new hires has this happened?

— — — 50-52
RECORD NUMBER
Some, DK#..... 996
DK..... 998
NA..... 999

329. How many of these did you know or suspect were eligible when you hired them?

— — — 53-55
RECORD NUMBER
Some, DK#..... 996
DK..... 998
NA..... 999

NO QUESTIONS 330 - 332

332A. The next series of questions are for the entire time period from January 1980 through today.

178

333. Have you been asked by the Employment Service or any other agencies to accept referrals of job applicants who are eligible for Targeted Job tax credits, or Work Incentive tax credits?

(THIS IS NOT CETA ON THE JOB TRAINING.)

56

Yes..(ASK 334)..... 1
No...(GO TO 335)..... 2
DK...(GO TO 335)..... 8
NA...(GO TO 335)..... 9

334. Did you agree to accept referral of tax credit eligibles?

57

Yes..(ASK 335)..... 1
No...(GO TO 338)..... 2
DK...(GO TO 338)..... 8
NA...GO TO 338)..... 9

335. Have you asked the employment service or any other agencies to refer people to your company who are eligible for a tax credit?

58

Yes..(ASK 335A)..... 1
No...(GO TO 338)..... 2
DK...(GO TO 338)..... 8
NA...(GO TO 338)..... 9

335A. Since January of 1980 how many of these tax credit eligible referrals were hired?

59-61

___ ___ ___
RECORD NUMBER
Some, DK#.....996
None.....997
DK.....998
NA.....999

335B. How many tax credit eligibles you were told had been referred never showed up for an interview?

62-64

___ ___ ___
RECORD NUMBER
Some, DK#.....996
None.....997
DK.....998
NA.....999

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336. Since the beginning of 1980 how many tax-credit-eligible workers were referred to you as eligible for TJTC OR WIN, were interviewed but not hired? (IF DK PROBE: Just your best guess.)

(ASK 337) ___ ___ ___ 65-67
RECORD NUMBER
Some, DK# (ASK 337)...996
None (GO TO 338)..... 997
DK (GO TO 338)..... 998
NA (GO TO 338)..... 999

337. What were the primary reasons why you did not hire these applicants? (DO NOT READ LIST)...RECORD VERBATIM, PROBE: What other reasons? / Can you be more specific?

_____

_____

_____

	First Mention	Second Mention	Third Mention
Poor qualifications (general).....	01	01	01
Person had wrong skills.....	02	02	02
Insufficient skills.....	03	03	03
Reading and writing poor.....	04	04	04
Lack of job knowledge.....	05	05	05
Lack of experience.....	06	06	06
Overqualified.....	07	07	07
Poor school record.....	08	08	08
Insufficient schooling or training....	09	09	09
Got poor recommendation from previous employer.....	10	10	10
Poor previous work record.....	11	11	11
Application incomplete.....	12	12	12
Misstatement on application.....	13	13	13
Poor interview.....	14	14	14
Applicant didn't show interest in job.	15	15	15
Language problem.....	16	16	16
Person doesn't seem to fit into company.....	17	17	17
Handicapped.....	18	18	18
No openings.....	19	19	19
Employment service was slow in sending people.....	20	20	20
Other_____	96	96	96
DK.....	98	98	98
NA.....	99	99	99

338. In the future, do you plan to ask for referrals of tax-credit-eligible employees when you need to hire unskilled workers?

74
Yes (GO TO 340)..... 1
No (ASK 339)..... 2
DK (ASK 339)..... 8
NA (GO TO 340)..... 9

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180

76-78 = 61
79 = 1
80 = 4

C.15

1 = b1

339. Can you tell us why you do not plan to ask for referrals? (DON'T READ LIST. RECORD VERBATIM. CODE IF CLEAR. PROBE: What other reasons?/ Can you be more specific?) New I.D.: 2-5

6-7

_____

8-9

_____

10-11

_____

_____

	First Mention	Second Mention	Third Mention
a. Didn't think of it	01	01	01
b. Don't expect to be hiring	02	02	02
c. Will not be needing types of workers who might be eligible	03	03	03
d. Employment service or other agency is too slow	04	04	04
e. Don't use the employment service	05	05	05
f. Dissatisfied with employment service referrals	06	06	06
g. Too much paper work	07	07	07
h. Eligible workers not skilled enough	08	08	08
i. Eligible workers not reliable enough	09	09	09
j. Applicants should be judged by qualifications not by whether tax credit available	10	10	10
k. Would not benefit because we have no tax liability	11	11	11
l. We are not eligible	12	12	12
m. Tax benefit not big enough	13	13	13
n. Might result in govern't interference Specify type_____	14	14	14
o. Other (SPECIFY)_____	15	15	15
DK	98	98	98
NA	99	99	99

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12

340. Have you heard of a government On-the-Job Training Program or OJT whereby the government pays a share of a private employer's cost of hiring and training certain eligible workers? In your area this program is administered by the employment service, CETA, and (READ FROM CARD A.)

Yes....(ASK 341)..... 1
No..... (GO TO 359)..... 2
DK (ASK 341)..... 8
NA (ASK 341)..... 9

(Q. 359 IS ON PAGE 56)

13

341. Have you or any of your staff spoken to a representative of government or a local business organization about the OJT program?

Yes (ASK 342)..... 1
No (GO TO 343)..... 2
DK (GO TO 343)..... 8
NA (GO TO 343)..... 9

14

342. Was the initial conversation about this program initiated by (READ LIST)...

You..... 1
Your staff or company.. 2
The Government..... 3
A trade association,or.. 4
A local business organization..... 5
Or something else..... 6
DK..... 8
NA..... 9

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343. Since January 1980 how many potential OJT employees did you hire for which you were promised reimbursement by this program?

(ASK 344) ___ ___ 15-16
RECORD NUMBER
Some, DK# (ASK 344) 96
None (GO TO 350)..... 97
DK (ASK 344)..... 98
NA (ASK 344)..... 99

17-18

344. How many such employees did you hire since January 1981?

___ ___ 19-20
RECORD NUMBER
Some, DK#..... 96
None..... 97
DK..... 98
NA..... 99

345. Since January 1980 have you ever hired a worker referred by the OJT program for which you were supposed to receive reimbursement but did not?

Yes (ASK 346)..... 1 21
No (GO TO 348)..... 2
DK (GO TO 348)..... 8
NA (GO TO 348)..... 9

22-23

346. How many of the OJT contract workers hired did you not receive reimbursement for?

___ ___
RECORD NUMBER
Some, DK#..... 96
None..... 97
DK..... 98
NA..... 99

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347. Why was reimbursement not received? (DO NOT READ LIST. RECORD VERBATIM. CODE IF CLEAR. PROBE: What other reasons?)

_____ 24-25

_____ 26-27

_____ 28-29

	First Mention	Second Mention	Third Mention
a. Employee did not stay with firm long enough	01	01	01
b. Benefit too small	02	02	02
c. Paperwork too great	03	03	03
d. Don't believe it's right to take government money	04	04	04
e. I have as little to do with government as possible	05	05	05
f. Might result in interference by government: SPECIFY type _____	06	06	06
g. Worker is so good I don't need reimbursement to justify hiring	07	07	07
h. The agency reneged on agreement	08	08	08
i. Other (SPECIFY)_____	09	09	09
No Response/DK	98	98	98
NA	99	99	99

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30

348. Since January 1980, have any of the employees for whom you <u>have</u> obtained some OJT reimbursement been people <u>you</u> originally recruited and then sent to the appropriate government agency to obtain certification?

Yes (ASK 349)..... 1
No (GO TO 350)..... 2
DK (GO TO 350)..... 8
NA (GO TO 350)..... 9

349. Since January <u>1980</u> how many workers did you recruit and obtain partial reimbursement for in this way?

31-33

___ ___ ___
RECORD NUMBER
Some, DK#..... 996
None..... 997
DK..... 998
NA..... 999

350. Have you been asked by the Employment Service, CETA or other agency to accept referrals of job applicants for which you would receive OJT reimbursement?

34

Yes (ASK 351)..... 1
No (GO TO 352)..... 2
DK (GO TO 352)..... 8
NA (GO TO 352)..... 9

351. Did you agree to accept applicants?

35

Yes (GO TO 353)..... 1
No (GO TO 357)..... 2
DK (GO TO 353)..... 8
NA (GO TO 353)..... 9

352. Have you asked any of these agencies to refer to your company people for whom OJT reimbursement would be available?

Yes (ASK 353)..... 1
No (GO TO 357)..... 2
DK (ASK 353)..... 8
NA (ASK 353)..... 9

36

353. Have you knowledge of any people being referred to you by this program since January 1980 who did not come in for an interview?

Yes.... (ASK 354)..... 1
No.... (GO TO 355)..... 2
DK (GO TO 355)..... 8
NA (GO TO 355)..... 9

37

354. How many? (IF DK PROBE: Just your best guess.)

— — —
RECORD NUMBER
Some. DK#..... 996
None..... 997
DK..... 998
NA..... 999

38-40

355. Since January 1980, how many job applicants who were referred by this program came to your establishment to apply for the job but were not hired?

— — —
RECORD NUMBER
Some, DK#(ASK 356) 996
None (GO TO 357)... 997
DK (GO TO 357)... 998
NA (GO TO 357)... 999

41-43

356. What was the primary reason you did not hire these applicants? (DO NOT READ LIST, RECORD VERBATIM, CODE IF CLEAR; PROBE: What other reasons? / Can you be more specific?)

_____ 44-45

_____ 46-47

_____ 48-49

_____

	First Mention	Second Mention	Third Mention
Poor qualifications (general).....	01	01	01
Person had wrong skills.....	02	02	02
Insufficient skills.....	03	03	03
Reading and writing poor.....	04	04	04
Lack of job knowledge.....	05	05	05
Lack of experience.....	06	06	06
Overqualified.....	07	07	07
Poor school record.....	08	08	08
Insufficient schooling or training....	09	09	09
Got poor recommendation from previous employer.....	10	10	10
Poor previous work record.....	11	11	11
Application incomplete.....	12	12	12
Misstatement on application.....	13	13	13
Poor interview.....	14	14	14
Applicant didn't show interest in job.	15	15	15
Language problem.....	16	16	16
Person doesn't seem to fit into company.....	17	17	17
Handicapped.....	18	18	18
No openings.....	19	19	19
Employment service was slow in sending people.....	20	20	20
Other_____	96	96	96
DK.....	98	98	98
NA.....	99	99	99

357. Are you planning to ask for referrals from this program in the future when you need to hire unskilled workers?

Yes...(GO TO 359)..... 1 50
No... (ASK 358)..... 2
DK (ASK 358)..... 8
NA (GO TO 359)..... 9

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APPENDIX C

UTILIZATION OF THE TARGETED JOBS TAX CREDIT

UTILIZATION OF THE TARGETED JOBS TAX CREDIT

Chapter 2 describes the utilization of the Targeted Jobs Tax Credit using numbers weighted by selection probability and the size of the establishment. In this appendix, these same charts will be presented using unweighted numbers. The unweighted tables give a better description of the actual sample used in this survey, whereas the weighted tables in chapter 2 attempt to describe the general population of firms from which the sample was drawn. Even though establishments are not weighted by their size, tiny companies do not completely dominate the unweighted tables because the survey oversampled large firms. Nonetheless, the patterns revealed in this appendix are roughly similiar to the patterns found in chapter 2.

The great majority of companies contacted in this survey reported that they had heard that tax credits are available to employers hiring certain types of workers. Only 26.5 percent of the managers of the smallest firms reported not having heard of TJTC, and less than 4 percent of the respondents from establishments with 500 employees or more had not heard of TJTC. Regardless of industry over three quarters of the firms had heard of the Targeted Job Tax Credits program.

As explained in chapter 2, large establishments were expected to have had more personal contacts concerning TJTC. The data in table C-1 confirm this expectation. The largest establishments contacted for this survey were much more likely to have been contacted about TJTC: 38.8 percent had been contacted by a government agency and 12.4 percent had been contacted by a trade association or local business organization. Only 10.4 percent of the firms with less than 10 employees had been contacted by any agency, government or private. The percentage of firms that had initiated contacts about TJTC was also higher for larger firms.

Firms in manufacturing were also more likely to have been contacted concerning TJTC, as illustrated by table C-2. Nearly one-quarter had been contacted by government representatives, and these firms also received the highest percentage of contacts from representatives, of trade associations and local business organizations. This may partially be explained by the fact that manufacturing establishments tend to be large. Mining establishments are also typically large and they had the second highest (14.9 percent) government agency contact rate. The construction companies had the lowest probability of

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TABLE C-1

KNOWLEDGE OF TJTC BY SIZE OF ESTABLISHMENT

	Number of Employees					All Firms
	1-9	10-49	50-99	100-499	500+	
Percent heard of TJTC	75.0	79.4	86.0	93.3	98.6	77.4
Percent contacted in person by government agency	4.2	8.9	16.1	27.9	21.5	7.0
Percent contacted in person by trade association or local business organization	13.0	22.4	40.0	57.2	68.2	18.8
Percent that have initiated a personal contact	5.5	5.8	16.7	12.4	43.2	6.7
Number of cases	1,557	1,212	335	380	80	68,904

TABLE C-2

KNOWLEDGE OF TJTC BY SIZE OF INDUSTRY

	Mining	Construction	Manufacturing	Transportations, Utilities, or Communication	Wholesale/ Retail	Eating/ Drinking	Finance	Service
Percent who have heard of TJTC	78.4	84.2	90.9	69.5	77.6	71.3	80.8	72.4
Percent contacted in person by government agency	3.3	6.0	11.6	8.6	9.0	7.2	5.1	4.2
Percent contacted in person by trade assocition or local business organization	15.9	18.1	27.5	20.1	21.5	22.5	12.6	14.4
Percent that have initiated a personal contact	1.9	7.5	5.5	6.7	6.4	7.9	5.3	7.4
Number of cases	67	242	407	140	1,086	328	238	893

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being contacted. Only 11 percent of construction firms were contacted by trade associations or local business organizations, and only 7.4 percent were contacted by government representatives. Mining establishments were the least likely to initiate contacts, with only 3 percent.

As may be expected from the data already discussed, larger firms were more likely to receive requests to accept TJTC referrals. Table C-3 illustrates this. Large firms were more likely to have been asked to accept referrals, were more likely to initiate requests for referrals, and planned to ask for referrals in the future more often. As in chapter 2, many more establishments planned to ask for referrals of TJTC eligibles when they have an opening for an unskilled worker in the future than have asked for such referrals in the past. Among establishments with 500 or more employees, 21 percent had initiated a request for referral of TJTC eligibles in the past and 45 percent planned to do so in the future, an increase of 114 percent. Among establishments with fewer than 10 employees, only 3 percent had initiated a referral request in the past, but 16.7 percent planned to do so in the future, an increase of 457 percent. The large projected increase in usage by small firms suggests that lack of unskilled job openings is a primary reason why small establishments are much less likely to participate in TJTC.

Manufacturing firms were more likely than firms in other industries both to be contacted about accepting TJTC eligible referrals and more likely to initiate a request for such referrals (table A.4). The transportation industry was the least likely to be contacted about receiving TJTC eligible referrals by employment agencies. The mining industry was least likely to initiate referral requests. The construction industry had fairly low percentages for receiving or initiating requests--17.8 percent and 4.1 percent respectively. Overall, the percentage of firms planning to ask for TJTC referrals in the future was pretty high, especially when compared to the percentage of firms who had initiated requests in the past. In the transportation industry, 24.3 percent planned to initiate requests in the future even though only 3.6 percent had done so in the past. This is an increase of 575 percent, which is quite remarkable, especially considering that the transportation industry was least likely to be contacted by an agency.

TABLE C-3

REFERRAL RELATIONSHIP BY SIZE OF ESTABLISHMENT

	Number of Employees					All Firms
	1-9	10-49	50-99	100-499	500+	
Percent asked by employment service or other agency to accept TJTC referrals	11.4	18.7	23.4	44.4	47.9	15.3
Percent initiating a request for referral of TJTC eligibles	2.5	3.6	5.1	19.1	39.2	3.8
Percent planning to ask for referral of TJTC eligibles for unskilled openings in future	13.2	19.7	22.8	37.2	62.7	16.7
Number of cases	1,557	1,212	335	380	80	68,904

TABLE C-4

REFERRAL RELATIONSHIPS BY TYPE OF INDUSTRY

	Mining	Construction	Manufacturing	Transportation, Utilities, or Communication	Wholesale/ Retail	Eating/ Drinking	Finance	Service
Percent asked by employment service or other agency to accept TJTC referrals	12.2	17.5	24.1	12.9	16.7	14.7	15.6	10.9
Percent initiating a request for referral of TJTC eligibles	7.1	2.6	4.2	3.1	4.9	5.8	1.9	2.9
Percent planning to ask for referral of TJTC eligibles for unskilled openings in future	13.1	15.6	21.0	15.2	19.6	17.5	14.0	13.8
Number of cases	67	242	407	140	1,086	328	238	893

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Examining utilization of TJTC according to establishment size (see table C-5) reveals a pattern in which large establishments are more likely to participate in TJTC than small establishments. Larger firms were more likely to have received tax credits under this program (lines 1, 2 and 3), and were more likely to have tried to select TJTC-eligible applicants (line 4).

Participation rates dropped for every size of establishment after September 1981, as revealed by line 3. The reasons for this drop are discussed in chapter 2. The largest drop is for the largest firms. Firms with more than 500 employees dropped from a participation rate of 38.8 percent in 1981 to a 26.3 percent rate in 1982.

The last four lines of table A.5 show how many subsidized employees firms had as a percentage of all employees (lines 5, 6 and 7) or as a percentage of new hires (line 8). These numbers reveal that small firms tended to have higher percentages of subsidized workers than larger firms. However, this tendancy is small, and all establishment sizes were fairly close together in this aspect, ranging only from 0.6 percent to 1.7 percent.

The percent of employees who were subsidized did not drop dramatically or consistently from 1981 to 1982. As noted earlier, the percentage of firms participating did drop (lines 2 and 3). This would imply that, although fewer companies did participate in 1982, those who did participate were obtaining increased numbers of TJTC certifications.

An examination of utilization by industry, table C-6, reveals patterns similiar to those in chapter 2. There is a similar tendency for fewer firms to be receiving TJTC in 1982 than 1981; however, mining and transportation are an exceptions and the drop is very slight for service establishments. Manufacturing establishments seem to have had the highest utilization rate, with a higher percentage of firms receiving TJTC.

The differences between indus- tries are not as great as the differences between small and large firms, how- ever. The mining industry had low percentages of firms receiving TJTC. The construction industry had a very low percentage of firms trying to select eligibles (3.3 percent).

The next four lines of table C-6 present data on the relationship between the number of TJTC-subsidized employees in an industry to that industry's

TABLE C-5

PARTICIPATION IN TJTC BY SIZE

	Number of Employees					All Firms
	1-9	10-49	50-99	100-499	500+	
Percent received TJTC in 1980	2.9	4.4	6.7	12.1	27.5	4.3
Percent received TJTC in 1981	1.9	3.2	9.0	16.6	38.8	3.5
Percent received TJTC in 1982	1.9	1.9	7.5	14.2	26.3	2.7
Percent trying to select eligibles	1.3	2.7	9.0	10.0	20.0	2.8
TJTC-subsidized employees in 1980 as percent of employment	.7	.6	.7	0.4	0.81	1.0
TJTC-subsidized employees in 1981 as percent of employment	.4	.5	.7	0.6	0.9	1.8
TJTC-subsidized employees in 1982 as percent of employment	.5	.3	.4	0.4	1.4	.8
TJTC-subsidized employees Jan.-Sept. 1981 as a percent of new hires in 1981	1.1	1.2	1.7	1.1	3.0	5.5
Average number of employees	5	21.4	67.7	206.7	910.2	68,904

TABLE C-6

PARTICIPATION IN TJTC BY TYPE OF INDUSTRY

	Mining	Construction	Manufacturing	Transportation, Utilities or Communication	Wholesale/ Retail	Eating/ Drinking	Finance	Service
Percent received TJTC in 1980	0.3	4.5	4.9	5.2	4.6	4.2	2.5	4.0
Percent received TJTC between Jan.-Sept. 1981	0.1	2.4	4.4	2.4	4.0	5.6	3.1	3.2
Percent received TJTC in both Sept. 1981 and April 1982	1.0	0.3	5.2	3.0	2.9	4.9	0.8	2.8
Percent trying to select eligibles	2.4	1.0	2.8	1.6	4.0	3.1	0.7	2.8
TJTC-subsidized new hires in 1980 as percent of employment	0.0	0.4	0.6	0.5	2.3	0.4	0.3	0.4
TJTC-subsidized new hires between Jan.-Sept. 1981 as percent of employment	0.0	0.3	0.4	0.3	5.0	0.6	0.3	0.4
TJTC-subsidized new hires between Sept.-April 1982 as percent of employment	0.50	0.1	0.2	0.1	2.0	0.6	0.04	0.4
TJTC-subsidized employees Jan.-Sept. 1981 as percent of new hires in 1981	0.0	0.3	1.8	1.4	17.7	1.4	1.2	1.2
Average number of employees	57.3	15.6	60	51	25.2	36.8	26.4	18.2

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total employment or total number of new hires. The mining industry, again, had consistently low percentages. Although the manufacturing industry had the highest percentage of firms participating (lines 1-3), it is the wholesale/retail industry that employs the most subsidized workers as a percentage of employees. The wholesale/retail sector also hired twice as many TJTC-subsidized workers as the manufacturing industry, when the number is analyzed as a percent of new hires in 1981 (5.0 percent to 2.5 percent).

Table C-7 analyzes the way in which firms participate in the TJTC program. The first figure in line 1 reports the percentage of all firms that had heard of TJTC and reported attempting to select tax-credit-eligible workers. This percentage, 5.5, is quite small. The second figure represents the percentage of the firms that have ever participated in TJTC that tried to select tax-credit-eligible employees. This percentage is, of course, higher, at 28.6 percent, because participants were more likely to try to select eligibles than nonparticipants. The third column in this line shows the percentage of firms that reported making an effort to select eligibles, where the firms are weighted by the number of subsidized hires made in 1980-81. The last figure is the percentage for firms weighted by the number of subsidized hires made after September 1981. The percentages are much higher for the last two columns--51.2 and 45.9 percent, respectively. This is expected because these last two numbers are dominated by large users of the program, and large users can be expected to have tried more often to select eligibles.

Firms were also asked if they tried "to identify and certify tax-credit-eligible employees who had already been hired." Only 14.4 percent of all firms that had heard of TJTC reported having tried to certify eligibles (line 2). The percentage of all participant firms that tried to identify and certify employees is significantly larger, at 55 percent. The percentages for participating firms weighted by number of subsidized hires are even higher--79.4 percent for 1980-81 and 81.3 percent for after September 1981.

As in chapter 2, firms were asked what they thought of TJTC eligibles. The results of this question are presented on line 3. The typical firm that had heard of TJTC tended to have a negative attitude toward TJTC eligibles. Only 7 percent said TJTC eligibles made better workers, and 35 percent said eligibility made no difference in the quality of a worker, whereas 28 percent

TABLE C-7

IMPACT OF TJTC ON THE RECRUITMENT AND SELECTION OF DISADVANTAGED WORKERS

	All Firms That have Heard of TJTC	Participants Only		
		All Participants 1/80-9/81	Weighted by Subsidized Hires 1/80-9/81	Weighted by Subsidized Hires after Sept. 1981
Percentage of firms that tried to select eligibles	2.8	28.6	80	81
Percentage of firms that tried to certify eligibles	8.0	55.0	89	90
Opinions of TJTC eligibles: better = 1 poorer = 1	-.43	-.232	-.05	.04
Percent of 1980-81 TJTC-certified hires who were known to be eligible during 1980-81	---	50.7	64	66
Percent whose choice was influenced by knowledge of TJTC eligiblity during 1980-81	---	35.5	35	35
Percent initiated requests for TJTC-eligible referrals	4.8	27.6	80	82
Percent agreed to accept or asked for referrals of TJTC eligibles	9.2	50.7	89	90
Percent planned to ask for TJTC-eligible referral influence when unskilled opening occurs	16.7	50.0	89	90

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thought they were poorer than average. A scale was constructed, as explained in chapter 2. The mean on this scale for all firms who had heard of TJTC and expressed an opinion was -.402. Given this negative attitude, it is not surprising that most firms do not participate in the TJTC program.

The next three figures on this line are quite interesting. All participants (a number dominated by small users) had a better but still relatively low opinion of TJTC eligibles. The mean for this group is -.232. Weighting the participants by the number of subsidized hires before September 1981 does not raise the average opinions by much (-.199). This implies that, prior to September 1981, the number of TJTC-eligibles working for a firm did not influence firms' opinions about the quality of eligible workers.

The most significant change is for the last column, participant firms weighted by subsidized hires after September 1981. These firms felt that TJTC-eligible workers were just as productive as the other workers they hired. Roughly as many reported that tax-credit-eligible workers were better as reported that these workers were poorer. The mean was .022. This finding is quite encouraging, because it implies that large users who were still using the program after September 1981 had a better image of TJTC workers. Large users who had good experiences with TJTC workers are the ones who continued to use the program after eligibility rules were tightened.

Employers who hired TJTC eligibles between January 1980 and September 1981 were asked, "How many of the employees did you know or think might be eligible before you hired them?" This question was used to calculate for each firm the percent of TJTC-certified hires prior to September 1981 who were known to be eligible at the time they were hired. The results are presented on line 4 of table 2.7. An unweighted average of these percentages for all participating firms is 50.7 percent. Unweighted averages tend to over represent small users, however. Weighting by the number of subsidized hires prior to September 1981 produces a slightly higher estimate (54.2 percent) of the proportion of all subsidized hires that were known to be eligible prior to being hired. When the firms are weighted by the number of subsidized hires after September 1981, the percent of firms who said they knew they were hiring eligibles <u>before</u> September 1981 increases significantly, to 71.3 percent. Thus firms who continued to use the program after September 1981 were more likely to have been participating knowledgeably before the changes were made.

GAO/HRD-84-18

The tightening up of the certification process in September 1981 seems to have screened out many of the firms that were determining eligibility only after the person had been hired.

Employers who knew or suspected that they were hiring TJTC eligibles were then asked, "How much did this possibilitiy of eligibility increase the applicant's chance of being hired?" Only 17.9 percent of the firms reported that a candidate's eligibility influenced their hiring decision "a great amount," and only 15 percent reported that it influenced their decision "a moderate amount." Yet 23 percent reported that their decision was "not very" influenced, and 46 percent reported not being influenced "at all." A scale was devised in which "a great amount" was assigned a value of one, "a moderate amount" a value of two-thirds, "not very much" a value of one-third, and "not at all" a value of zero. The weighted and the unweighted averages of this scale for participating firms were slightly more than one-third, 34.7 and 35.8 percent.

The last three lines of table C-7 examine referral relationships. Firms were asked if they had requested TJTC referrals from an employment or other agency; or if they had agreed to accept TJTC referrals upon request from an employment or other agency; or if they planned, in the future, to ask for referrals of tax-credit-eligible employees when an unskilled job opening occurred. As might be expected, all firms who had heard of TJTC had the lowest percentages for (1) requesting referrals, 5.8 percent; (2) accepting referrals, 15.2 or percent; (3) planning to ask for referrals in the future, 21.2 percent.

This is again explained by the high number of nonparticipants in this category. The figures in column 2, all participants, are consistently smaller than the numbers in columns 3 and 4. For instance, only 50.7 percent of all participant firms had asked for or agreed to accept referrals, compared to 81.3 percent of the firms weighted by subsidized hires in 1980-81. It implies that large users are more likely to utilize referrals of TJTC eligibles. This is not an unexpected finding. This also explains the relatively large percentage of large users who claim to be trying to select eligibles (line 1, columns 3 and 4) but who also report not allowing eligibility to influence their selections from a pool of applicants.

APPENDIX D

DESCRIPTION OF THE EMPLOYER HIRING DECISIONS SURVEY AND THE INFLUENCE OF APPLICANT CHARACTERISTICS OTHER THAN TJTC ON RATINGS

THE 1983 NIE/NCRVE EMPLOYER HIRING DECISIONS SURVEY

The National Institute of Education and the National Center for Research in Vocational Education funded a survey of employers in durable manufacturing, construction, and automobile maintenance and repair industries. The survey probed these employers' hiring and training activities for entry-level machine trade jobs. Employers in wholesale and retail trade industries were surveyed about hiring and training for entry-level sales positions. Finally, the same survey (in a version geared to clerical positions) was sent to firms in the finance, insurance, real estate, and other service industries. The survey was initially mailed to 6,448 employers in June 1983, and 855 completed responses were received.

Sample and Survey Procedures

For the most part, the sample was judgmentally selected in a two-stage process. In the first stage, several cities and areas were selected for inclusion in the survey. Table D-1 lists the selected cities and areas. In the second stage, employers within those areas were selected according to industry.

TABLE D-1

CITIES AND AREAS COMPRISING SAMPLE FOR SURVEY

Boston, Massachusetts	Cleveland, Ohio
Springfield, Massachusetts	Detroit/Flint, Michigan
Philadelphia, Pennsylvania and surrounding counties	Chicago area, Illinois
State of Delaware	East St. Louis, Illinois
Baltimore, Maryland	Houston, Texas
Virginia Peninsula	Southern California
Columbus, Ohio	Seattle, Washington
Toledo, Ohio	

For each of these sites, an industrial directory served as the sample frame. Firms in certain industries thought to hire a substantial number of entry-level

workers into clerical, retail, or machine trade occupations were selected. When employment size was listed in the industrial directory, firms with fewer than 10 employees were excluded from the sample to minimize respondent burden. The general procedures used to decide whether to include a firm or not were that (1) employers in durable manufacturing, some construction, and automobile maintenance and repair industries were sent machine trade applications; (2) employers in wholesale and retail trade, some restaurant, and hotel sectors were sent retail trade applications; and (3) employers in finance, insurance, and real estate and other service industries were sent clerical applications.

Table D.2 shows the original and completed sample size by site and occupational groups.

TABLE D-2

SAMPLE SIZE, BY SITE AND OCCUPATION

(Entries are original sample size/completed sample size)

	Clerical	Retail	Machine Trades	Total
Boston, MA	60/7	31/3	56/8	147/14
Springfield, MA	4/0	0/0	121/15	125/15
Philadelphia, PA	239/43	229/14	413/40	881/97
State of Delaware	162/11	156/12	115/12	433/35
Baltimore, MD	73/12	47/6	65/11	185/29
Virginia Peninsula	65/10	43/7	36/1	144/18
Columbus, OH	89/24	72/13	83/19	234/56
Toledo, OH	76/20	14/1	81/14	171/35
Cleveland, OH	49/18	45/7	15/6	109/31
Detroit/Flint, MI	459/76	182/19	302/53	941/148
Chicago area, IL	172/27	61/8	222/29	455/64
E. St. Louis, IL	7/0	0/0	38/4	45/4
Houston, TX	190/22	57/9	152/17	399/48
Southern CA	315/51	169/12	1244/147	1728/210
Seattle, WA	253/32	83/11	105/8	441/51
Total	2211/353	1189/121	3048/338	6448/855

The questionnaire and a set of fictitious applications for employers to rate were mailed to the 6,448 employers during the period of June 20, 1983 to July 20, 1983. As of August 15, 1983, completed responses had been received from 426 employers, and there had been 81 refusals or misaddresses that could not be resolved. Thus, 5,941 nonrespondents requiring follow-up efforts at that time.

The first follow-up consisted of mailing (in late August) a second copy of the questionnaire to a random sample of approximately 1,000 of the nonrespondents. These individuals were also contacted by telephone approximately 3 weeks later to solicite their response. The remaining 5,000 nonrespondents were mailed a letter requesting their response (but not a second questionnaire) with a return postcard.

A considerable number (28 percent) of the nonrespondents who were telephoned indicated that they had not received the follow-up correspondence and requested yet another copy of the questionnaire. Furthermore, 416 of the 4,970 employers (8.4 percent) returned postcards indicating that they would participate and requesting another copy of the questionnaire either for themselves or someone else in their firm.

By October 1, another 166 responses had been received as a result of the phone calls and the follow-up mailing, which brought the total number of completed responses to 592. A second follow-up was mailed to a randomly selected one-half of the employers who had not responded. This follow-up consisted of a cover letter and questionnaire.

With the receipt of 855 completed questionnaires, the overall response rate was 13.2 percent. An analysis of data collected about refusals and nonrespondents indicated that the completed questionnaires were reasonably representative of the entire sample.

Questionnaire and Job Applications

The questionnaire has seven major sections. The first section requested data about the particular respondents, including age, education, sex, race, and position and duties within the firm. The second section asked about the characteristics of the firm, such as employment size, age, and unionization of the work force. Since hiring decisions at a firm are made within the context of the firm's personnel policies, considerable data about the establishment's hiring process were collected in the third section of the questionnaire. The fourth section focused on the firm's training process. It was deemed important to collect data about the extent and type of training, because the size of the firm's average investment in training may influence how careful it is in hiring.

Besides investigating the hiring decisions behavior of firms, a secondary purpose of the survey was to learn how youth fare in jobs once they are hired. To

investigate this subject, sections 5 and 6 of the questionnaire gathered information about several youth recently employed by the firm. In section 5, individual and job characteristics, such as age, education, sex, race, previous work experience, wages, and productivity ratings, were gathered for 2 youths (whom were supposed to be chosen at random by the employer respondent) who had been hired within the previous 2 years--one of whom had subsequently been promoted and the other retained by the firm but not promoted. In section 6, similar characteristics were reported about 3 youths who were hired in the last 2 years, but who have been separated from the firm through (1) voluntary quit, (2) layoff, and (3) dismissal.

The final (seventh) section of the questionnaire asked (1) an objective question about how well prepared youthful job applicants are in certain academic subjects and (2) an open-ended question about schools and about youth that have been hired.

For most employers, the completed job application provided the initial information on the applicant's abilities, skills, and experiences. The employer's evaluation of the application's content, in conjunction with the duties of the open job position, determine which applicants are interviewed and subsequently which are hired for the position. To simulate the employer's initial evaluation of prospective employees, job application information was generated that systematically varied the applicant's educational credentials and work experience.

The data presented on the applications included the following:

- Age
- High school attended
- Major/program in high school
- Grade point average in high school
- High school diploma
- Postsecondary school attended
- Major/program in postsecondary school
- Grade point average in postsecondary school
- Diploma or degree from postsecondary school
- Work history (0-5 jobs)
  - --Employer
  - --Starting and ending date
  - --Position
  - --Duties
  - --Reason for leaving
- Typing speed (for clerical and retail sales)
- Machines operated (for machine trades)
- Referral source
- Eligibility for a Targeted Jobs Tax Credit

The Influence of Applicant Characteristics Other than TJTC on Ratings

High School Education

In constructing the applications to be used as stimuli in the data collection, the following characteristics about the applicants' high school experiences were varied:

- Name (type) of high school
- High school major/program
- Participation in a cooperative education program or occupational work experience program
- Grade point average
- Graduate or dropout

The variance concerning the name or type of high school was that Central High School represented a central-city public school; St. Mary's, a parochial school; and Jeffersonville, a rural or surburban (presumably public) school. Obviously, the influence of these variables depends on how respondents interpreted the school names. Grade points were assigned randomly from a uniform distribution over the span (1.40, 3.60) of a 4.0 system.

The high school major or programs differed slightly by occupation and were assigned randomly from the following list:

Retail/Clerical Applicant	Machine Trades
General	General
Office Education	Machine Trades
Distributive Education	Cooperative Machine Trades
College Preparatory	Occupational Work Experience (OWE)
Cooperative Office Education	
Cooperative Distributive Education	
Occupational Work Experience	

The variables that were constructed from this information were whether or not the high school program was relevant to the job in question and whether or not the applicant participated in a cooperative education program or an occupational work experience program.

The marginal effects on employability of high school characteristics are presented in table D-3. The high school grade point average (GPA) had a larger impact on employer hiring priority ratings than any other single characteristic of the youth. For clerical and machine trades jobs, raising one's high school GPA by 1 point (e.g., from C to B) raised hiring priority ratings by 14 points. The impact of GPA on ratings for retail jobs was smaller though still highly significant. Raising one's GPA by one point raised the rating for a sales job by 7.75 points.

Hundreds of studies by industrial psychologists have established an important relationship between tests of cognitive ability and job performance. Meta-analysis of this research has produced consensus estimates for a variety of occupations of the correlation between job performance and scores on tests measuring the cognitive skills taught in schools. The median correlation is .52 for clerical jobs, .31 for skilled factory jobs, and .17 for sales jobs (Hunter & Hunter 1984).

Is the high school GPA as powerful a predictor of employability ratings as these tests are of job performance? Employers are probably using GPA as a signal of both cognitive ability and such character traits as good work habits, reliability, and punctuality. Controlling on other characteristics of the worker, the partial correlations (betas) of employability rating and high school GPA were .21 for clerical, .23 for machine trades, and .18 for sales jobs. The betas are lower than the corresponding simple correlations between test scores and performance. This implies that, even though the high school GPA was the single most important determinant of employability ratings, it is not viewed by hiring decision makers to be as valid a predictor of job performance as tests have been demonstrated to be. The pattern across occupations is similar to the pattern of correlations between cognitive tests and job performance. The cognitive abilities that are measured by tests and high school GPAs are more important for clerical and machine trades jobs than for sales jobs.

As might be expected, graduation from high school generally had a significant and large effect on employability ratings. However, the size of the coefficient was smaller than for a 1.0 difference in grade point average and was not significant for retail trade employers.

TABLE D-3

MARGINAL EFFECTS OF HIGH SCHOOL ACHIEVEMENTS ON HIRING PRIORITY

Variable	Full Sample	Clerical Applicants	Retail Applicants	Machine Trades Applicants
Attended Central High School[a]	.73	1.54	2.84	- 1.38
Attended St. Mary's High School[a]	- .28	.02	1.73	- 2.12
Cooperative Ed. Program	3.15*	.39	6.82**	b
Occupational Work Experience Program	.23	1.19	4.00	.05
Relevant Major	- 1.64	- .95	- 4.50	4.49***
High School GPA	12.61***	14.21***	7.75***	13.79***
Graduated	7.63***	7.37**	5.49	9.85***
Referred by a High School or College	1.94	1.48	.17	3.22*

[a] Omitted class is attended Jefferson High School.

[b] Not applicable in this equation.

* Significant at < .10 level.
** Significant at < .05 level.
*** Significant at < .01 level.

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The results suggest that high school cooperative distributive education programs have a better reputation with employers than high school distributive education programs without a cooperative component. Though the coefficient is not statistically significant, the results imply that taking classroom distributive education lowers the rating by 4.5 points. Those who had a co-op distributive education score a statistically significant 6.8 points higher. Consequently, the net effect of taking a co-op distributive education program is 2.3 points.

The only type of high school vocational education program that consistently increased the students' hiring priority rating was machine trades. Students who had gone through that program were rated a highly significant 4.5 points higher, and receiving a referral from a machine trades high school teacher raised ratings another 3.2 points.

Having obtained employment during high school through an occupational work experience program did not affect one's hiring priority rating. The type (or location) of the generic high school did not have a statistically significant impact on employer ratings of applicants.

Postsecondary School Experience

As described earlier in chapter 4, each employer rated 11 applicants, of which 4 had attended a 2-year postsecondary institution and taken an occupational program that was relevant to the targeted job. The marginal effects of attendance, type of institution, grade point, and obtaining a degree from a postsecondary school on employability ratings are shown in table D-4. For clerical and machine trades jobs, taking 1 year of occupationally relevant courses at a 2-year postsecondary institution raised employability ratings by 13 to 16 points and completing a 2-year program that results in the receipt of an associate degree raised them further by 10 points. For retail jobs, a large 29-point increase in ratings was produced simply by attending for 1 year. All of these effects were statistically significant. Whether or not the institution was public or private and what the grade point average was at the postsecondary institution did not have significant effects on employability ratings when other traits of the applicant were controlled.

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TABLE D-4

MARGINAL EFFECTS OF RELEVANT OCCUPATIONAL POSTSECONDARY EDUCATION ON HIRING PRIORITY

	Full Sample	Clerical Applicants	Retail Applicants	Machine Trades Applicants
Took 1 or more years of training at a 2-year college or institute	14.18**	15.68**	29.03*	12.68
Attended private institution	1.05	.82	- 2.37	.49
Postsecondary GPA	.40	- .59	- 5.81	2.82
Obtained associate degree in a field relevant to the occupation	10.13***	9.58***	1.71	10.81***

* Significant at < .10 level.
** Significant at < .05 level.
*** Significant at < .01 level.

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Prior Work Experience

Considerable variation in prior work experience was introduced on the application forms. The number of prior jobs held ranged from zero to five. The number of months of prior work experience ranged from 0 to 68. Reasons for leaving jobs included, "left to look for full-time job," "left for better job," "went back to school," "was laid off," "was temporary job," and "quit."

In table D-5, the coefficients for a number of work experience variables are presented. In the empirical examination of work experience, applicants who had worked prior to finishing their schooling were classified into two groups: (1) working during summers only and (2) working during the school year and summers. Some controversy has arisen in the literature about the effect of part-time work during high school, so those applicants who had chosen to work only during summers were isolated from those who had worked during the school year. For both types of workers, a zero-one dummy variable was entered into the equations, as well as months of work experience in the two states, to measure the length of the work experience.

In terms of types of prior work experience, several variables were used to test hypotheses about relevant work experience and work experience in large firms or organizations, in fast-food establishments, and in public organizations. The hypotheses were that a larger share of work experience in relevant jobs or in jobs in large organizations would have a positive influence on employability ratings, and that a larger amount of time in public jobs or work experience in fast-food restaurants would have a negative influence on applicants' employability ratings. In Hollenbeck (1984) and Miguel and Foulk (1982), employers reported that reasons for leaving jobs were important factors in assessing applicants, so the following two variables were used: (1) the number of times the reason for leaving a job was "quit" and (2) the number of times the reason for leaving was "was laid off."

Finally, if the applicant had worked, the applicant's unemployment status was measured by using the months since the last job ended. The expectation about this variable is ambiguous, because a long period of unemployment could indicate that the applicant is not as employable as other applicants who have shorter spells of unemployment. On the other hand, it could indicate that the

TABLE D-5

MARGINAL EFFECTS OF WORK EXPERIENCE VARIABLES ON EMPLOYABILITY RATING

Variable	Full Sample	Clerical Applicants	Retail Applicants	Machine Trades Applicants
Any work experience	2.37	7.02*	.35	4.79
Total number of months of prior work experience	- .10	- .17	- 4.72	.15
Number of jobs	- 1.70	- 3.00	- 4.41	1.73
Worked part-time during school year prior to leaving school	6.20***	4.20	15.33**	4.03
Number of months worked during school year	.22	.04	.83*	.24
Worked only summers prior to leaving school	5.83***	2.76	5.47	6.04**
If worked only summers, numbers of months	- .01	1.39*	1.02	- 1.62**
Ratio of months of relevant work experience to total months of work experience	14.29***	14.55***	28.00***	10.02**
Ratio of months of work experience in large organizations to total months of work experience	6.34***	- .46	12.54**	14.52**
Ratio of months of work experience in public organizations to total months of work experience	- 5.88***	- 3.27	- 4.37	-13.36***
Any work experience in fast-food restaurants	1.36	.61	8.44**	- .92
Number of quits	- 8.11***	-11.69***	- 8.79	- 9.65***
Number of "laid-offs"	- 1.88*	2.49	5.02	- 6.12**
Months since last job	.44***	- .10	.42	1.03**
Gaps in employment record	1.51	2.13	1.31	- 3.70

* Significant at < .10 level.
** Significant at < .05 level.
*** Significant at < .01 level.

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applicant is more eager or willing to work and thus might be a good hire. The last variable in the table is the gaps in employment experiences (i.e., there was at least 1 month of not working between 2 prior jobs). Existence of a gap is tyically thought to be a negative factor.

The results showed that having some work experience had a very large positive influence on employability ratings. The distinction between working only in the summer versus working at some time during the school year was not important, however. Having either type of work experience had a significant positive effect on employability of about the same magnitude to the full sample. The implication of this result is that working part-time (or full-time) during the school year does not provide more than a marginal improvement in employability ratings, over having work experience solely during summers. Considering the large influence that high school grade point average has on employability ratings, however, if part-time work causes those grades to decline, any marginal advantage from the extra work experience quickly disappears.

Although the coefficients were not statistically significant, employers seem to have reacted negatively to the number of prior jobs held. The number of jobs can be interpreted as a signal of a high turnover propensity, which is presumably a negative trait. The total number of months worked was not significant in any of the equations, implying that employers tend to count the number of prior jobs for which information is provided, but do not weigh the duration of those jobs heavily.

The relevance of the applicant's prior work experience was an important positive factor in determining employability ratings. If one of two otherwise identical job applicants had 40 percent of his or her job experience in relevant jobs, whereas the other person had all prior work experience in relevant jobs, the former's predicted rating was lower by about nine points (which is approxiately the same size of effect as high school graduation has). The relevance of the job experience variable was particularly important for retail applicants.

Work experience in large organizations was also confirmed to be a positive factor. It was positive and significant in equations for the full sample, the retail sample, and the machine trades sample. Work experience in

[illegible]

a public (or governmental) organization had a significant negative marginal effect on employability ratings (again in the full sample and machine trades). Work experience in a fast-food restaurant did not stigmatize youth as anticpated, and for retail employers, such work experience was a strong determinant of employability.

The results shown in table D-5 support the hypothesis that the number of quits is negatively associated with employability ratings. In terms of magnitude, two quits would more than offset the positive marginal effect of having any work experience. The number of times the applicant reported being laid off was an important negative factor for machine trades employers, but not for the clerical or retail employers.

The number of months since the last job ended was a significant positive variable for the machine trades employers, but did not influence the ratings in the other occupations. To our surprise, having a gap in the employment record had a positive effect on employability ratings. The survey was conducted in the midst of a very severe recession. It seems that, at least during deep recessions, there is no stigma to being unemployed.

Skills and Other Factors

Two occupationally specific skill variables were shown on the application forms that were rated. For clerical and retail applications, the applicant's tested typing speeds were reported (this was randomly drawn from a range of 40 to 60 words per minute). For the machine trade applicants, the number and names of machines that could be operated were provided. In this case, one-third of the applications had "none," one-third had "boring mill, saw, shaper," and one-third had "lathe, grinder, drill press, milling machines, boring mill, saw, shaper." As shown in table D-6, both of these skill variables were highly significant.* For clerical applicants, results show that an increase in typing speed of 20 words per minute improves employability as much as attending a postsecondary program.

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*In the full sample analysis, the mean number of machines operated (3.67) was entered for clerical/retail applicants and the mean typing speed (50 words per minute) was entered for machine trades.

TABLE D-6

MARGINAL EFFECTS OF SKILL AND OTHER VARIABLES ON EMPLOYABILITY RATING

Variable	Full Sample	Clerical Applicants	Retail Applicants	Machine Trades Applicants
Typing Speed	.73***	.90***	.21	[a]
No. of Machines Operated	1.02***	[a]	[a]	.81***
Referral Source:				
Employment Service	.19	1.84	2.41	.19
School	1.94	1.48	.17	3.22*
Advertisement/sign	.00	2.99	.87	- 1.48
Friend	.74	1.17	5.80	2.38
Age	.49	- .50	3.96*	.27

[a] Not applicable since variable not used in these applications.

* Significant at < .10 level.
** Significant at < .05 level.
*** Significant at < .01 level.

TABLE D-7

MARGINAL EFFECTS OF JOB CHARACTERISTICS ON EMPLOYABILITY RATINGS

Variable	Full Sample	Clerical Applicants	Retail Applicants	Machine Trades Applicants
Starting Wage	.58	- 2.92***	.39	1.98***
Retail Occupation	1.35	[a]	[a]	[a]
Machine Trade	2.49**	[a]	[a]	[a]
Difficulty of Dismissal[b]	- 1.01	1.88	7.16**	- 4.35***
Cost of Machine[c]	.07	.99*	.97	- 1.14*

[a] Not applicable in this equation.

[b] Dummy variable equal to one, if "a lot" or "some" paperwork required to dismiss an employee; otherwise zero.

[c] Categorical variable from smallest category to largest.

* Significant at < .10 level.
** Significant at < .05 level.
*** Significant at < .01 level.

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A question of interest is how the source of referral affects the employer's assessment of an application. Bishop, Barron, and Hollenbeck (1983) found a strong proclivity on the part of employers to rely on informal methods of referral, such as friends or current employees, in making hiring decisions. Their study shows that workers hired through informal channels had somewhat higher productivity and required less training time than workers on the same job who were hired through such formal sources as the job service, schools, or private employment agencies.

The referral source item on the application was used to test the effect of referral source on employability ratings. In the simulated applications, the following referral sources were distributed equally:

Job service
School counselor
Advertisement/sign
Unknown or no referral
Friends/acquaintance at firm

The "unknown or no referral source" was the omitted category, so all of the coefficients in table D-4 are relative to that category. Although there are interesting differential patterns in the signs of the variables across occupations, only one of the coefficients was statistically significant. Finally, age had no effect in ratings except for the retail job.

The Influences of Job and Firm Characteristics on Employability

Job Characteristics

Characteristics of a job that might influence ratings are the wage rate, the occupation, the amount of job security, and the type of equipment with which the applicant would work. Hypotheses are that the higher the starting wage, the more care will be exercised in hiring (i.e., the lower the rating). Also, the more job security (as measured by the difficulty-of-firing variable) and the more expensive the equipment to be used on the job, the more negative the rating will be.

The results of testing these hypotheses are somewhat mixed (see table D-7). For those not eligible for TJTC, the wage had the expected negative effect on hiring priority ratings for the clerical jobs, but had a positive effect on ratings for machine trades jobs. For those eligible for TJTC, wage had a statistically significant negative effect on ratings for clerical jobs, but a nonsignificant positive effect on ratings for retail jobs and close to no effect on ratings for machine trades jobs. The variable dealing with difficulty of dismissal had the expected effect on the ratings of applicants for machine trade jobs, but had an effect that was opposite of what was expected for the retail applicants.

A possible explanation for the findings regarding sales jobs is the extent to which commissions are used. If commissions account for most retail compensation, the employer would not need to dismiss less-productive employees, for their lower sales would automatically result in lower compensation.

Firm Characteristics

The estimates of the marginal effects of the characteristics of the firm are presented in table D-8. Most of the results confirmed prior expectations. Size of the establishment did not have statistically significant effects on the ratings.

Because all job applicants were young, a variable measuring the percentage of the firm's work force that was under age 25 was included in the model. It was hypothesized that firms that hire many workers under the age of 25 would tend to rate young job applicants (such as those presented by the simulated job applicants) higher than other firms. This hypothesis was supported by the results. The average marginal effect for the sample (.12) translates into an applicant receiving a 7-point higher rating at a firm where 50 percent of the work force was under age 25, than at a firm where only 10 percent of the employees were under age 25.

Whether or not a firm has a formal probationary period and what the length of such a period is if it does have one, may affect the care that raters exercise in assessing applicants. If there is a formal probationary period, employers can accept more risk and thus ratings may be higher. As the

TABLE D-8

MARGINAL EFFECTS OF FIRM CHARACTERISTICS ON EMPLOYABILITY RATINGS

Variable	Full Sample	Clerical Applicants	Retail Applicants	Machine Trades Applicants
Log establishment employment	.12	.30	1.17	- .70
Percentage of work force under age 25	.12***	.06	.18***	.09*
Firm has no formal probationary period	- 5.28***	-10.61***	.88	- 3.09
Length of formal probationary period (weeks)	- .06	- .21	- .47	- .04
New hire rate	.18	.41***	.004	.25***
Percentage of time receiving specific training	.027	.005	- .022	.033
Percentage of time receiving general training	- .004	.013	- .028	- .009
Number of competing firms in area[a]	- 2.18**	- 7.72***	-10.04***	.81
Percentage of new hires separated within 2 years	.73***	1.25***	1.79**	.40
Percentage of reasonably well-qualified applicants	.15***	.15***	.02	.17***

[a] Categorical variable from small to large.

* Significant at < .10 level.
** Significant at < .05 level.
*** Significant at < .01 level.

217

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probationary period lengthens, the firm's investment in the new hire increases, and so higher standards should be used; that is, the sign of the marginal effect of the length of the probationary should be negative. Having no formal probationary period was negative and significant both for the clerical sample and for the equation estimated over the total sample. That is, having no formal probationary period seemed to cause employers to become more selective. As anticipated, the sign of the length of the formal probationary period coefficient was negative (although not significant) in these equations.

Firms with high new hire and quit rates will typically choose not to be as selective as firms with low rates of turnover. If the expected tenure is short, it does not pay to invest heavily in selecting new employees, so hiring standards tend to be lower. Firms that must hire large numbers of new employees often find they are forced to set lower hiring standards. High turnover rates may also be a consequence of a lack of hiring selectivity. These hypotheses were supported by the significant positive coefficients on the new hire rate and the separation rate.

Respondents were asked how many other companies in the local area used the general skills required in the specified job. Barron and Bishop (1983) found this variable to be positively related to the extent of employer's search for new employees (e.g., the number of applicants interviewed before selecting a new employee). The explanation for this finding is that it pays to engage in a more extensive search if there is a prospect of finding an applicant who already is experienced and skilled in the type of work to be done. If no other firms in the area have similar jobs, the employer will not attempt to seek out an already experienced worker and will instead seek someone who can learn the job quickly. This leads one to expect a negative association between the number of other firms with similar jobs and the ratings assigned to inexperienced workers (such as those described on the simulated job applications). This hypothesis is strongly supported for clerical and retail jobs, as well as for the full sample.

Influence of the Rater Characteristics

The final group of variables that was included in the model incorporated personal characteristics of the individual respondents (see table D-9). The data that were gathered included the following covariates:

TABLE D-9

MARGINAL EFFECTS OF RATER CHARACTERISTICS ON EMPLOYABILITY

Variable	Total Sample	Clerical Applicants	Retail Applicants	Machine Trades Applicants
Sex (1= male)	1.43	.04	- 3.55	4.56**
Race (1=black)	5.19**	.08	10.03*	6.47
Member of personnel staff	- .67	- 4.72***	1.04	2.39
Hiring authority	- 2.30	- 1.95	- .01	- 5.27*
Firing authority	- .68	.26	- 2.67	- 2.35
Age[a]	.44	- 1.52	5.17***	.66
Education[a]	.79**	1.11**	- .87	.73
Years participated in hiring in any firm	.18***	.40***	.08	.16

[a] Categorical variable ranging from smallest to largest.

* Significant at < .10 level.
** Significant at < .05 level.
*** Significant at < .01 level.

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- Age (less than 30, 30-44, 45-54, 55+)
- Education
- Sex
- Race
- Position in the firm
- Job duties
- Hiring authority
- Firing authority
- Tenure in job
- Tenure in establishment
- Hiring experience in any job

The race of the respondent had a significant positive effect on ratings in the full sample and in the retail applicant subsample. The sign of the effect was positive for all occupations. This tends to confirm prior evidence that blacks rate applicants higher than whites (the applicants were supposed to be of the same race, although it was not specified). If the individual had full or shared responsibility for hiring staff, then tougher standards were applied, as might be expected. Firing authority, did not seem to have a significant impact on the ratings. The age of the rater had a positive effect on the employability ratings in the retail sample, whereas years participating in hiring processes (presumably highly correlated with age) had a significant positive effect for clerical applicants and in the full sample. The educational attainment of the raters had a significantly positive effect on employability assessments in the full sample and in the clerical subsample. The sex of the rater apparently influenced ratings for machine trades applicants (males rated applicants higher).

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